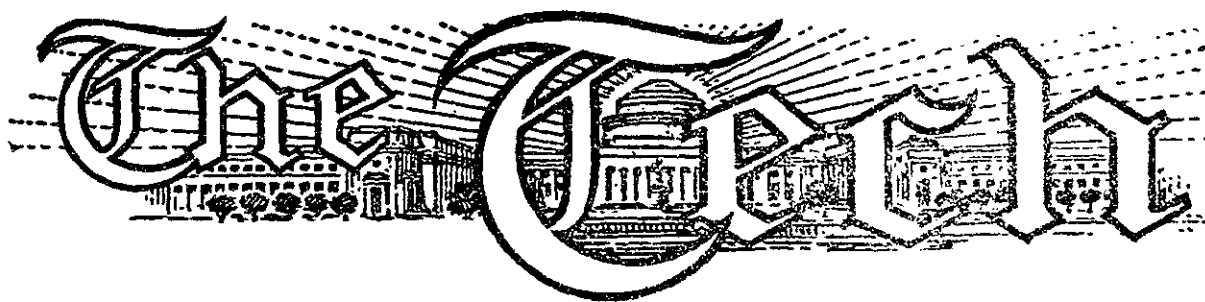


Welcome to  
Open House



MAY 4 1935  
LIBRARY  
Director  
on Page 3

Volume LV. No. 24

CAMBRIDGE, MASS., SATURDAY, MAY 4, 1935

Complimentary

# TECHNOLOGY IS HOST TODAY

## Light Beam Transmits Sound in E.E. Display

**Slow Motion Pictures Show Actions Too Swift for Eye**

**High Voltage Display Will Prove To Be Spectacular**

**Stroboscope Makes Objects In Motion Appear To Be Standing Still**

A peep show, a beauty parlor, a breath tester, and high voltage displays will feature the extraordinary displays of the Electrical Engineering Department in their laboratories here today.

Other exhibits will include stroboscopic representations of various moving objects, the transmission of sound by means of light rays, and visual demonstrations of the wave form of sound.

### Movies in 10-160

In room 10-160 will be found a laboratory where high speed movies will be shown. These are ultra-slow motion pictures which demonstrate things which happen too fast for the unaided human eye to see.

(Continued on Last Page)  
Electrical Engineering

## Varied Features of Student Life Shown In Walker Memorial

**Tech Show, Tea Dance, Presented Free for The Enjoyment of Visitors**

A Tea Dance in the gymnasium at 4 o'clock, the production of three acts of Tech Show at 8:30, an information bureau in the Technology Christian Association office and the opening of all undergraduate activity offices for inspection are the features of Walker Memorial, the undergraduate recreation.

(Continued on Page 9)  
Walker

## The Chemical Clock Is Subject of Talk

Cold Light, Thermite, and many other subjects will be presented in the chemical lectures to be given today in Room 10-250, from 4 to 5 o'clock, and from 7 to 8 o'clock.

(Continued on Last Page)  
Chem. Lectures

## Miniature Guns, Mortars Displayed by Chemical Warfare Unit of R.O.T.C.

Among the displays in the Military Science section of the Hangar Building is one which has been constructed for use in training the Chemical Warfare Unit of the R. O. T. C.

The range consists of a sand table, a screen, two miniature guns mounted on chemical mortar, observers' tables, aiming stakes, and a map of the area.

### Table Landscape

The sand table is ten feet wide and fifteen feet long, and is loaded with sand which has been modeled into a landscape, with the features of the landscape distorted in size in order to appear realistic. A railroad, houses and roads and other permanent features have been placed on the table to be used on the map as reference points.

A system of trenches manned by toy soldiers, machine gun nests, artillery

**Free Seals Given Visitors By the Metals Laboratory**

Souvenir Technology seals will be cast while you wait at the Metals Laboratory in Building 35 across Vassar Street behind Technology.

In the Welding Laboratory, is a continuous showing welding processes, including spot, flash, oxy-hydrogen, A. C. and D. C. arc and flame cutting.

There is also exhibitions of hot and cold forgings.

The manufacture of the seals will constitute the exhibit of moulding and pouring in the foundry.

## Odometer Checks Automobile Speed

**Device Will Be Demonstrated To Test Speedometers For Visitors**

People coming to Open House in their autos will be afforded a unique opportunity of checking their speedometers. At the Automotive Laboratories, Building 31, Milton McCleod, '35 and Richard Purcell, '35, student inventors of the electrical Odometer will demonstrate their device on visitors' cars.

The electrical Odometer consists of a generator driven by a bicycle wheel which is slung on the running board of the car. The generator actuates a voltmeter which is accurately calibrated in miles per hour.

Other exhibits in the Automotive Laboratories include a setup for determining the air consumption of a Ford V-8 motor under operating conditions and a device for measuring clutch slip under different conditions of load.

## Ship Models Are Shown In Museum

**Portraits, Etchings, Charts, Radio Compass Included**

A unique collection of ship-models including United States war vessels, American steamboats, merchant ships and yachts, British steam and merchant vessels, French, Dutch and Italian.

(Continued on Page 9)  
Naval Museum

## Four Colleges Enter Crews In Regatta Today

**Syracuse, Harvard, Cornell And Technology Meet On Charles At 2:30**

**Tech May Provide Surprise Win**

Strengthened by the return of Guy Haines, stroke, a light but spirited varsity crew is entering today's regatta with Harvard, Cornell and Syracuse, with chances about even for a victory. Although critics around town do not believe the Tech boat has more than a fair chance for victory, the enthusiasm around the boat house and the unusually high morale all seem to point to a big upset in the predictions.

The Tech boat is entering the regatta as the most experienced entry of the afternoon, having already met

(Continued on Page 8)  
Crew

## Latest in Science, Engineering Shown

**Exhibit Features Freshman Hobbies**

**Aviation, Marine Models, And Nautical Devices Shown**

Scientific boon-doggling, an exhibition of freshman hobbies, will be one of the features offered at Open House today.

Heretofore, freshmen were not exhibitors because they had not been at school for a long enough period to enable them to design and demonstrate advanced displays. This year, however, about 20 individuals of the class

(Continued on Last Page)  
Boondoggling

**Visitors Crowd Halls, Demonstrations, and Labs.**

**Institute Extends Welcome; Host to Thousands of Guests**

**Technology In Full Operation To Present Picture Of School**

Amazed, curious, and interested crowds throng the Institute as Technology welcomes thousands of visitors to its twelfth Open House today.

Footweary groups will reluctantly tear themselves from the multitude of compelling displays tonight, as 10 o'clock brings to a close one of the fullest days of the year.

Ten million volts rip the atom to bits; infinitesimal currents scan the spectra. Four hundred horsepower engines turn in the Steam Laboratory; slender glass knives operate upon almost invisible cells under the Biology microscopes.

Above all, there is the hum and activity of the Institute in full operation. The latest in scientific development.

(Continued on Last Page)  
General Story

## Geologists Probe Depths of Earth With Magnenometer

**History Of Institute Grounds For Past Billion Years Illustrated**

Recent inventions for probing the depths of the earth will be demonstrated by the Department of Geology at its exhibit which consists in part of a miniature landscape with a cross-section.

(Continued on Page 9)  
Geology

## Exact Working Model Shows Falls Project

**Civil Engineering Department Exhibits Power Company Development**

A complete working model of the fifteen Mile Falls development of the New England Power Company will be shown today in Room 1-345 by the

(Continued on Last Page)  
C. E. Department

## Refreshments Served At Homberg Infirmary

**Lantern Slides Showing Health Of Students Displayed**

Punch and cake are being served to students, Faculty members, and their guests in the lobby of the Richard M. Homberg Memorial Infirmary, the Institute's hospital, where students and staff are examined annually and where they are treated for all minor illnesses.

The refreshments have been prepared by Mrs. George W. Morse, wife of the Medical Director and is being served in two hour shifts by each member of the Medical Staff together with his wife.

### Lantern Slides Shown

At 4 and 8 o'clock, lantern slides showing statistics on the health of students at the Institute since the foundation of the Infirmary will be shown together with a lecture by Dr. Morse.

## Whooping It Up At Technique Rush



## \$5 in Prizes Will go to Winners of Paddles in 1935 Technique Rush

Five dollars to the man getting the first paddle, and a cup to the group obtaining the most paddles are the additional prizes which will be awarded in the annual Technique Rush to be held this afternoon at 3:30 on the Tech field.

More than a hundred men are ex-

pected to participate in the mad scramble for paddles, handed out through a slit in the top of a slippery shanty, each of which represents a copy of the Institute's year book.

Fifty gallons of grease will be (Continued on Last Page)  
Technique Rush

## "Cold Light" Puzzle Shown at Lecture by Chemistry Students

**Phenomenon Produced by Work Of Complex Organic Material**

The production of "cold light" by chemical means will be demonstrated in Room 10-250, at four o'clock today.

By the use of a complex organic material known as luminol, light can be produced with sufficient intensity to permit the reading of a newspaper. The strange feature of this source of light is that there is no appreciable rise in temperature of the liquid chemicals. One can even dip his hands into the fiery liquid without the slightest injury.

Many instances of development of visible radiation are on record, but none can compare with the brilliancy of the "cold light" to be produced today. It is probably the brightest case of chemiluminescence on record.

Most chemiluminescence reactions are oxidations. It is produced by treatment of a dilute aqueous alkaline solution of "luminol" (3 aminophthalhydrazide) with both hydrogen peroxide and another oxidizing agent.

## Extraction of Gold Is Demonstrated By Mining Department

**Crushing, Amalgamation, And Separation Included In Process**

The process of extracting gold from its ores will be featured by the Department of Mining and Metallurgy today. The complete process beginning with the crushing of the pieces of ore to the final reclamation of the mercury will be shown in Room 8-230.

The ore is first crushed by two stamps working alternately side by side

(Continued on Last Page)  
Mining and Metallurgy

## Machines Exhibited For Fatigue Testing

The Dynamics of Materials Laboratory has as its exhibit two fatigue testing machines and a Magnaflex tester for surface cracks of steel.

In the Magnaflex test the surface of the steel is lightly covered with finely divided magnetic particles and is then magnetized so that the formation of an external field is prevented.

## Corps Reviewed and Awards Made By Miss Compton

Chosen As Honorary Colonel Of Local Chapter Scabbard and Blade

To Lead Grand March At Ball

The cadet corps of the R. O. T. C. of Technology were reviewed Wednesday afternoon by Miss Mary Compton, daughter of President Karl T. Compton, who has been chosen honorary colonel of the local chapter of Scabbard and Blade.

Miss Compton was escorted by Cadet Colonel Elmer J. Roth, of South Orange, N. J., and Captain Lawrence W. Sharpe, of Hollywood, Calif., who is also captain of Scabbard and Blade. She was introduced to the regular army officers at the review, and Colonel Roth then presented her to his cadet staff of majors.

After inspection of the various companies, the entire corps passed in review before Miss Compton and the officers in the reviewing group.

The regular army officers who assisted the cadets at the review were Colonel Samuel C. Vestal, head of the department of military science; Colonel Robert Arthur, Major Oscar J. Gatchell, Major Thomas J. Johnston, Captain Bayard Johnson, Captain James F. C. Hyde, Captain Charles E. Atkinson, Lieutenant George A. Bicher, and Lieutenant W. C. D. Bridges.

### Scholarships Presented

During the review Miss Compton presented the army ordnance scholarships. The senior award went to Lieutenant Colonel Thonet C. Dauphine, of Faribault, Minn., and the junior award to Second Lieutenant Rudolph J. Ozol of Boston.

Miss Compton was also the guest of honor at the Scabbard and Blade ball held in Walker Memorial on Friday evening. She led the grand march under crossed sabres a colorful military ceremony seldom seen outside West Point.

## Thirty-Inch Suction Of Centrifugal Pump Shown in Laboratory

Water Is Supplied At the Rate Of 24,000 Gallons Per Each Minute

Water supplied at the rate of 24,000 gallons per minute at a height of 40 feet is the job performed by a centrifugal pump in the basement of the Steam Lab., Building 3, for the purpose of studying engineering methods.

Direct connection is made to a 325 horse power, angle-compound steam engine. The pump has a 30 inch suction, and a 30 inch exhaust, and operates at 240 revolutions per minute. Because of the intensity of the suction developed, the intake pipe is placed five feet below the surface of the water so that air will not be drawn in and spoil the operation.

### Exceeds Rated Capacity

Although the pump has a rated capacity of 24,000 gallons per minute, it has delivered as much as 38,000 gallons per minute in tests. All this water is drawn from a canal 10 feet deep, located in the floor of Building 3.

The water leaving the pump is shot through a Venturi meter to determine its velocity, and then, knowing the area of the tube, one is enabled to calculate the volume of water flowing.

## Institute Committee Elects New Officers

Marking the final meeting of the Institute Committee of 1934, Walter H. Stockmayer, the retiring chairman after wishing the Institute Committee of 1935 success, relinquished his chair to John C. Austin, the new president of the Senior Class.

Subsidiary officers of the Institute Committee were then open for election. Those chosen were Brenton W. Lowe, '36, vice-president, William B. duPont, '36, secretary, and Anton E. Hittl, '36, member-at-large of the Executive Committee.

## Passing in Review



Miss Mary Compton, center

## Reveal Maturity Of Cotton Fiber

Polarized Microscope Involved In Process Which Gives Better Products

Because of certain structural peculiarities of the cotton fiber, it has been possible to develop in the Textile Laboratory of the Institute a technique to measure the "maturity" of this fiber.

This process will be exhibited as part of the Open House today. This technique, which involves the use of a polarized microscope, is simplicity in itself and yet provides for smoother operation of the textile mill, and finer quality products.

### Bad Fibers Mar Quality

The textile industry has long been aware of the fact that immature fibers fail to contribute an adequate share to the strength of the yarn, and that they tend to disappear in the manufacturing process causing an undue amount of waste. They cause difficulties in dyeing and similar operations, since they resist the reaction of swelling agents and do not take dyes to produce a shade similar to that found on mature fibers.

### Graded in Four Groups

By the technique developed it is possible in the Laboratory and in several of the mills that have adopted the technique to grade cotton into at least four groups of relative maturity. No particular training is necessary for the observer provided only that he can distinguish between yellow-green, blue and purple.

## Micro-Manipulator Is New Instrument

Moves Cells Under Microscope; Operates With 0.000025 Inch Accuracy

One of the features of this evening will be the showing of a Micro Manipulator. This device, which has recently come into use in biological science, enables investigators to reach into living cells placed under high power microscopes, and move the different parts of the organism about.

By the use of capillary needles made of fine glass, microscopic particles of the cell can be removed, or substances can be injected to note the effect on the living organism.

### Accurate to .000025 Inches

The instrument is extremely delicate and sensitive. Fine screws move the needles with an accuracy of .000025 inch, and by observation under high power lenses, its movement can be controlled to pick out the desired particles. This instrument promises to be of great aid in the study of biology.

Through its use, microscopic animals and living cells can be subjected to selective degradation in an effort to find what parts of the cell are necessary to continued life. Many problems long debated in biological circles may be solved by its use.

### See Single Celled Animals

The Biology Department of Technology also plans to show numerous organisms, far too small to be seen with the unaided eye. By means of a micro-projector, parasites, amoeba, flagellates, and many other single celled animals as well as the more complex structures will be projected on the screen.

This enables all to see just what the biologist observes under high power microscopes.

## Radio, Telegraph Used By The Tech

Day's Happenings Broadcasted And Telegraphed To Main Lobby

Radio broadcasting through Main Lobby of the Institute and Walker Memorial and the telegraphic transmission of all of the news events of the day feature The Tech's part in today's Open House.

The crew race on the Charles River, the Technique Rush, and the track meet with Bates College are being described while they happen by means of a portable broadcasting outfit constructed and operated by members of the staff.

### Simplex Machine in 4-138

In addition to the broadcasting, The Tech has had a Simplex telegraphic outfit installed from its news office to Room 4-138 through the courtesy of the Western Union.

### Visitors Give Messages

By means of this, it is possible to send messages back and forth concerning the events of the day. Visitors are being allowed to give messages for transmission.

The broadcasters will be out in a launch during the crew race and will send out the account of happenings to the roof of Walker Memorial where it will be picked up and relayed to the Main Lobby and to the Walker amplification system.

### Sport Broadcast

Thus, persons in both the main buildings and in the dining halls will be privileged to hear a "length by length" broadcast.

In addition to the Simplex machine, Room 4-138 has an exhibition of old volumes of The Tech, and other material of interest for those curious about newspaper work.

## Building Materials Laboratory Exhibits Brick, Mortar Tests

Porosity, Void Ratio, Density, Rate Of Absorption Determined

Many eminent professional societies from all types of industries have shown an interest in masonry research during the past few months.

Here at Technology, the Building Materials Laboratory in Room 4-033 has been busy testing bricks, mortar, and brickwork since it was established three years ago.

Under the supervision of Walter C. Voss, Professor of Building Construction, and his assistant, Robert M. Becker, many different kinds of masonry, flashings, and wall sections have been built and tested.

### Properties Tested

They have arranged to show a complete exhibit of the tests made upon a lot of bricks during its investigation. Among the properties studied are porosity, void ratio, density and rate of absorption of water.

### Bricks First Sorted

The brick are first sorted as they come from the manufacturer, all broken and cracked ones being discarded at once. Then they are weighed

## Technology Graduate Wins Award in Bridge Designing Competition

Jerome M. Raphael, '34 Is Given First Prize In A.I.S.C. Contest

Jerome M. Raphael, '34, a student at the Institute, won first prize in the seventh annual bridge design competition held by the American Institute of Steel Construction. Alexander Matthews, Jr., a student at the Yale School of Engineering, won second prize. First honorable mention was given to David Hiat of New York University, and second honorable mention to Fred A. Thompson, Jr., of Iowa State College.

The problem was to design a steel grade crossing elimination bridge carrying a highway over a railroad and another highway parallel to the railroad. In addition to giving students certificates of award, the first prize carries a cash compensation of \$100 and the second prize \$50.

These awards were made from the 10 best designs selected in a preliminary competition when 94 students from 22 colleges in the United States entered drawings. The jury of award consisted of Dr. Shortridge Hardesty and E. R. Needles, consulting engineers of New York; H. Craig Severance, J. Andre Foulhoux, architects of New York, and A. Lawrence Kocher, managing editor of The Architectural Record.

Raphael is the son of Mrs. George Raphael of 152 Homes Avenue, Dorchester. He was graduated from Technology last year with the degree of bachelor of science in architectural engineering, and is now studying for his master's degree, doing much of his work in the department of civil engineering.

and measured: six specimens which are very closely the same in density are chosen from those submitted.

### Absorbtometer Test

These are remeasured and tested in the Absorbtometer for their rate of absorption of moisture. This machine automatically records the changing weight of a brick as it soaks up water. Mechanical strength tests such as modulus of rupture and compressive strength, are next made. Thin sections taken from the broken halves are examined microscopically so as to learn the condition of the bond layer between the brick and the mortar.

### Test of Assemblages

Other brick from the shipment are made up into assemblages which after appropriate ageing and curing are broken by tension, and their bond strength computed. This afternoon and evening, the men in the laboratory will demonstrate their methods through actual testing operations on mortar flow, brick density, absorption and bond strength.

### Microscopic Sections

Slices showing microscopic views of the bond layer between mortar and brick will be shown to the public. The curing room, with its apparatus for controlling the humidity and temperature of the atmosphere, will be open for inspection.

## Cape Cod Canal Model Displayed In Building 20

Engineers To Study Effects Upon Cape Waterway If Enlarged

Prof. Reynolds Heads Project

Cape Cod Canal and Buzzards Bay are shown in a huge scale model being built in Building 20, to enable engineers to study in advance the effects of the proposed enlargement of the waterway.

The model of the canal will show it as it will appear, widened to 700 feet on the surface and dredged to a depth of 40 feet.

### To Accommodate Liners

This enlargement will provide a waterway capable of accommodating most of the large liners, as well as naval vessels. The model will be 115 feet long and will occupy all of Building 20, which has been set aside for this research.

### Directed by Prof. Reynolds

The project is under the direction of Professor Kenneth C. Reynolds of the Department of Civil and Sanitary Engineering, who is co-operating with Colonel John J. Kingman of the United States Army Engineers Corps in a study of the hydraulic problems that will be encountered in enlarging the canal.

### Work to Last Several Months

Lieutenant E. C. Harwood is supervising the study for the government, and Donald F. Horton is his representative in residence at the Institute. The work is expected to last for several months.

The complex nature of the investigation is indicated by the fact that the average rise and fall of the tide in Cape Cod Bay is five feet greater than in Buzzards Bay, thirteen miles distant through the canal.

### Difference In Time of Tides

There is a difference of three hours in the tide times in the bays. As a result, the tide in Buzzards Bay is rising while the sea is still falling in Cape Cod Bay, and the tide in Buzzards Bay begins to ebb several hours before high water at the other end of the canal.

### Nine Foot Tide Differences

Occasionally, under unusual conditions of flood tide driven by high winds, maximum differences in level of nine feet between the bays may occur.

At high tide in Cape Cod Bay the water rushes westward through the canal to the lower level in Buzzards Bay. Six hours later the current reverses and flows swiftly to the east.

### Strong Currents

Under ordinary conditions the maximum velocity of these currents exceeds three miles an hour, while during storms it may reach nearly five miles an hour.

### Scale of Nine Feet to the Mile

The model will be built to the scale of approximately nine feet to the mile, and will be constructed of concrete and sand to form a channel accurately reproducing the curved path of the canal across the Cape.

(Continued on Page 3)

Cape Cod Canal

THE STORE FOR MEN

Jordan Marsh Company

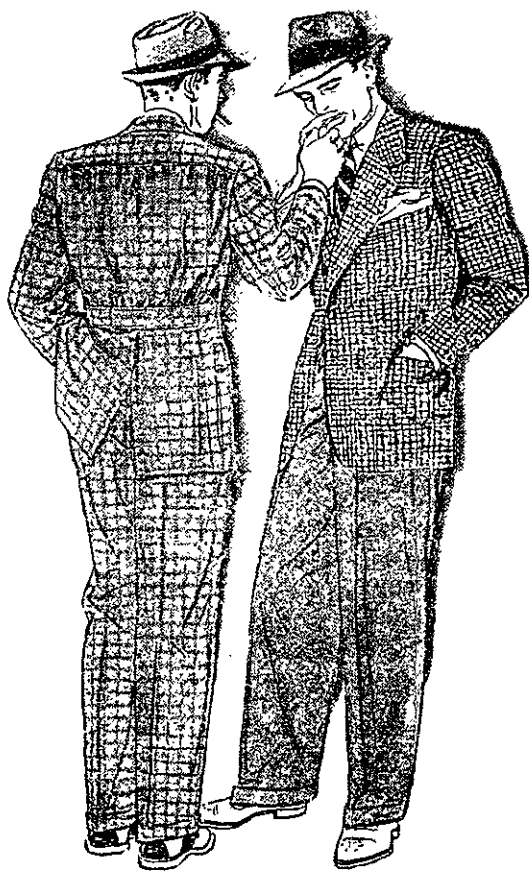
The place for smart

Sports Suits

\$25 to \$55

Until you've looked them over you won't realize the possibilities in our sports suits for young men. SPORTS BACKS in bi-swing, shirred yoke, vented and plain back models with saddle pockets. CHECKS and PLAIDS and plenty of blended grays and browns, TWEEDS AND SHETLANDS that do wonders to a fellow's wardrobe.

Second Floor—Store for Men





# Steam Engine Runs After Fifty Years

Built In 1885, The Engine Was Used As Testing Ground For New Designs

Still in operation, a steam engine invented fifty years ago that set new records of economy at that time and later became the "testing ground" for modern steam engine design, is being shown in the Steam Lab., in Building 3 today.

## Built in 1885

Built for the Institute about the year 1885, this engine is especially designed to facilitate experimental operation. The three cylinders develop 50 horse power each, running at a speed of 80 revolutions per minute.

Sizes of the cylinders are 9, 16, and 24 inches, with low, intermediate, and high steam pressures respectively. Connections are designed so that any or all of the cylinders may be used singly, or in any combination. In the customary operation, exhaust steam from the cylinders is admitted to the next larger cylinder, that from the largest going to a condenser.

## Steam Jacketing

Provision was made to allow reheating the steam between cylinders. Steam jackets are built around the cylinders, and these may also be used or not, depending on the operator's wishes. Steam pressure used is 160 pounds, in the high pressure cylinder.

Much of the experimental work on steam engine operation was done on this engine, and it was the testing ground for theories of design. Much of our present knowledge would have been delayed if it were not for the comparison of conditions and results made possible by this installation.

JACKSON  
&  
MORELAND

Engineers

BOSTON - NEW YORK

# DIRECTORY OF EXHIBITS

## Building 2, Basement

Rooms 2-015, 2-019, 2-077 — Displays of Thesis Apparatus by Chemical Engineering Students: Cottrell Precipitation, Corrosion and Heat Treatment, Rubber Mill, Dropwise Condensation.

## Building 2, First Floor

Exhibit by Architecture Department; Architectural Designs, Drawing and Modeling, Painting of a Full-Length Portrait.

Room 2-170—Department of Mathematics: Talk by Prof. Weiner on Mathematical Puzzles, Exhibition of Harmonic Analyzer, Integrating Apparatus, and Other Computing Devices.

Room 2-110—Chemical Engineering Laboratory: Slugging, Tunnel Drying Leather, Wind Tunnel in Operation, Triple Effect Evaporation, Steamline Flow.

## Building 2, Second Floor

Room 2-219—Brownian Movement Exhibit.

Room 2-210—Qualitative Laboratories.

Room 2-245 — Freshman Hobbies Exhibit.

## Building 2, Third Floor

Drawing Rooms — Exhibitions of Work of Students in Descriptive Geometry and Drawing.

## Building 4, Basement

Department of Ceramics Laboratories open.

Room 4-007—Electric Smelting.

Room 4-041—X-Ray Examination of Metals.

## Building 4, First Floor

Room 4-138—Exhibition by The Tech: Simplex long-distance type-writing machine, Methods of Publication, Public Address System with News Flashes, Short Wave Reports of Crew Race and Track Meet.

Room 4-145—Heat Measurements Laboratory.

Freshman Chemistry Laboratories.

## Building 4, Second Floor

Room 4-270—Movies on Chemical Engineering.

Freshman Chemistry Laboratories.

## Building 4, Third Floor

Room 4-370—Exhibit and Lectures on Chemistry. Department of Geology Exhibit including Paleontology, Geophysics, Mineralogy, Dynamic Geology, and Petrography. Rooms 4-304 and 4-310—Optical Measurements Laboratory.

## Building 4, Fourth Floor

Laboratories of the Department of Chemistry.

## Building 6, Basement

This building houses research laboratories of Physics and Chemistry. Entrance to Spectroscopy Laboratory in Insulated Building. Exhibitions of Diffraction Gratings, Measurement of Spectra and Automatic Spectrum Measuring Machine.

## Building 6, First Floor

Models of Van de Graaff Generator.

Room 6-120 — Demonstration of Glassblowing.

## Building 6, Second Floor

Rooms 6-215 and 6-217—Exhibition of Gaseous Discharges, Fluorescence, and Photo-Electric Effects. Rooms 6-203 and 6-205—Electronics Laboratory.

## Building 6, Fourth Floor

Rooms 6-408 to 6-416—X-Ray Laboratories.

## Building 8, Basement

Room 8-010—Fire Metallurgy Laboratory. Lead Blast Furnace Run.

## Building 8, First Floor

Room 8-130—Gold Stamp Mill, Mineral Separation, Settling Power Tests on Minerals. Room 8-105—Pottery Exhibit.

## Building 8, Second Floor

Room 8-201—Color Measurements Laboratory: Color Analyzer explained by Professor Hardy. Not a popular exhibit.

Room 8-205—Movies on Petroleum Production.

Room 8-210—Leaching of Copper Ores. Electrolytic Refining of Copper.

## Building 8, Third Floor

Room 8-330—Fire Assaying of Metals.

Room 8-308—Balance Room open for inspection.

Room 8-434—Metallography.

Room 8-410—Heat Treatment of Metals.

Room 8-405—X-Ray Examination of Metals.

## Building 10, Basement

Room 10-060—Dynamo Laboratory: Magnetic Frying Pan, Miniature Power System, Stroboscopic Measurements.

## Building 10, First Floor

Room 10-160—Measurements Laboratory: Transmission of Sound on Light Beam, Wave Form of Sound, High Voltage Display, Cathode Ray Oscillographs, Device to Measure Lung Power.

## Building 10, Second Floor

Room 10-250—Movies by Edgerton's High Speed Camera. Time: 3-4, 6-7, and 9-10 o'clock. Freshman Lectures on Chemistry. Time: 4-5 and 7-8 o'clock. Demonstration of Tesla Coil for High Voltage Discharges. Time: 2-3, 5-6, 8-9 o'clock. Room 10-275—Lecture Demonstrations by Members of the Sophomore Class chosen from the Physics Courses.

## Building 10, Third Floor

Room 10-338—Differential Analyzer. Computing Machine.

Room 10-395—Network Analyzer for Solution of Transmission Problems.

Room 10-385—Electrical Engineering Communications Exhibits. Means of Electrical Communication. Reaction Time by the Shock Method.

## Building 10, Fourth Floor

Department of Biology and Public Health: Biochemical Action by Wireless, Largest Known Coffee Extractor, Rats and Rickets, Health Education Movies, Germicides by Invisible Light, Brook Trout Exhibit, Micro-Projection of Living Water Animals, Micro-Manipulator.

## Building 11, Infirmary

A doctor and nurse are on duty to care for any illness. Punch served.

## Building 3, Basement

Room 3-050—Steam Laboratory. Engines in Operation. Miniature Locomotive on Track.

Room 3-003—Electronics Laboratory: Radio Tube Manufacture, Photo-cell Selector.

## Building 3, First Floor

Room 3-150—Steam Laboratory; Engines in Operation.

## Building 3, Second Floor

Room 3-270—Movies on Automobile Tests.

## Building 3, Third Floor

Room 3-305—Display of Signal Corps Equipment.

Room 3-310A—Display of Coast Artillery Instruments.

Room 3-370—Army Movies of the Functions of the Engineer Corps.

Rooms 3-311 and 3-315 — Textile Laboratories.

Room 3-350—Machine Tool Laboratory: All machines running — Lathes, Grinding Machines, Milling Machines, Profiling, Broaching, and Automatic Gear Cutting.

## Building 5, First Floor

Museum of Ship Models. Room 5-129—Movies of the Thorne-Loomis European Tour. Time and Motion Study.

## Building 5, Second Floor

Room 5-220—Naval Architecture Model Room.

Room 5-226—Building Construction Movies.

Room 5-240—Building Construction Exhibit.

## Building 5, Third Floor

Room 5-330—Movies by Department of Naval Architecture; "The Building of a Ship" and International Cup Races. Time: 3-5 and 8-10 o'clock.

## Building 1, First Floor

Room 1-110—Testing Materials Laboratory: Tensile Tests on Ropes, Bending of Beams.

## Building 1, Second Floor

Room 1-210 — Testing Materials Laboratory.

Room 1-223—Display of Army Ordnance Equipment.

Room 1-235—Building Construction Exhibit.

## Building 1, Third Floor

Room 1-310—Testing Materials Laboratory.

Room 1-334—Soil Mechanics Laboratory.

Room 1-345—Civil Engineering Department Exhibit: Designs and Apparatus, Model of Fifteen Miles Falls Power Development.

## Building 35

Welding Laboratory: Oxy-acetylene, Electric Arc, Electric Resistance, and Thermite Welding. Foundry and Forge Shops.

## Building 46

Refrigeration Laboratory.

## Building 33

Aeronautical Engineering Department: Wind Tunnels, Airplane and Engine Designs, Meteorology, and Gliders.

## Buildings 20 and 21

River Hydraulics Laboratories. River and Canal Models with Flow over Weirs.

## Hangar Gymnasium

Display of Chemical Warfare Equipment, Miniature Sandbox Firing Range, Searchlight and Guns on Exhibit.

Wrestling, Boxing, and Fencing Exhibits.

## Charles River

Crew Races: Harvard, Cornell, Syracuse, and Technology. 2:30 o'clock.

## Coop Field

Lacrosse Game. Technology vs. Williams at 2 o'clock.

## Walker Memorial

Walker Gymnasium—Tea Dance at 4 o'clock. Sports Review at 7:30.

Entertainment by Musical Clubs and Tech Show at 8:30 o'clock.

Dining Halls open from 12 to 8 o'clock.

Center of Undergraduate Activities, with offices of The Tech, The Technology Christian Association, The Tech Engineering News, Voo Doo, M. I. T. Athletic Association, Tech Show, Musical Clubs, and Institute Committee.

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Transient Rates for Our Suites and Special Student Rates

"We cater to friends and relatives of Tech men"

Facilities for Group Dinners with Special Rooms and Prices

MASSACHUSETTS AVENUE  
At Harvard Bridge  
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# Boit, Dalton, Church & Hamilton

89 BROAD STREET  
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INSURANCE  
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ALL KINDS

## Cape Cod Canal

(Continued from Page 2)

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## Corps Reviewed and Awards Made By Miss Compton

Chosen As Honorary Colonel Of  
Local Chapter Scabbard  
and Blade

To Lead Grand March At Ball

The cadet corps of the R. O. T. C. of Technology were reviewed Wednesday afternoon by Miss Mary Compton, daughter of President Karl T. Compton, who has been chosen honorary colonel of the local chapter of Scabbard and Blade.

Miss Compton was escorted by Cadet Colonel Elmer J. Roth, of South Orange, N. J., and Captain Lawrence W. Sharpe, of Hollywood, Calif., who is also captain of Scabbard and Blade. She was introduced to the regular army officers at the review, and Colonel Roth then presented her to his cadet staff of majors.

After inspection of the various companies, the entire corps passed in review before Miss Compton and the officers in the reviewing group.

The regular army officers who assisted the cadets at the review were Colonel Samuel C. Vestal, head of the department of military science; Colonel Robert Arthur, Major Oscar J. Gatchell, Major Thomas J. Johnston, Captain Bayard Johnson, Captain James F. C. Hyde, Captain Charles E. Atkinson, Lieutenant George A. Bicher, and Lieutenant W. C. D. Bridges.

### Scholarships Presented

During the review Miss Compton presented the army ordnance scholarships. The senior award went to Lieutenant Colonel Thonet C. Dauphine, of Faribault, Minn., and the junior award to Second Lieutenant Rudolph J. Ozol of Boston.

Miss Compton was also the guest of honor at the Scabbard and Blade ball held in Walker Memorial on Friday evening. She led the grand march under crossed sabres a colorful military ceremony seldom seen outside West Point.

## Thirty-Inch Suction Of Centrifugal Pump Shown in Laboratory

Water Is Supplied At the Rate  
Of 24,000 Gallons Per  
Each Minute

Water supplied at the rate of 24,000 gallons per minute at a height of 40 feet is the job performed by a centrifugal pump in the basement of the Steam Lab., Building 3, for the purpose of studying engineering methods.

Direct connection is made to a 325 horse power, angle-compound steam engine. The pump has a 30 inch suction, and a 30 inch exhaust, and operates at 240 revolutions per minute. Because of the intensity of the suction developed, the intake pipe is placed five feet below the surface of the water so that air will not be drawn in and spoil the operation.

### Exceeds Rated Capacity

Although the pump has a rated capacity of 24,000 gallons per minute, it has delivered as much as 38,000 gallons per minute in tests. All this water is drawn from a canal 10 feet deep, located in the floor of Building 3.

The water leaving the pump is shot through a Venturi meter to determine its velocity, and then, knowing the area of the tube, one is enabled to calculate the volume of water flowing.

## Institute Committee Elects New Officers

Marking the final meeting of the Institute Committee of 1934, Walter H. Stockmayer, the retiring chairman after wishing the Institute Committee of 1935 success, relinquished his chair to John C. Austin, the new president of the Senior Class.

Subsidiary officers of the Institute Committee were then open for election. Those chosen were Brenton W. Lowe, '36, vice-president, William B. duPont, '36, secretary, and Anton E. Hittl, '36, member-at-large of the Executive Committee.

## Passing in Review



Miss Mary Compton, center

## Reveal Maturity Of Cotton Fiber

Polarized Microscope Involved  
In Process Which Gives  
Better Products

Because of certain structural peculiarities of the cotton fiber, it has been possible to develop in the Textile Laboratory of the Institute a technique to measure the "maturity" of this fiber.

This process will be exhibited as part of the Open House today. This technique, which involves the use of a polarized microscope, is simplicity in itself and yet provides for smoother operation of the textile mill, and finer quality products.

### Bad Fibers Mar Quality

The textile industry has long been aware of the fact that immature fibers fail to contribute an adequate share to the strength of the yarn, and that they tend to disappear in the manufacturing process causing an undue amount of waste. They cause difficulties in dyeing and similar operations, since they resist the reaction of swelling agents and do not take dyes to produce a shade similar to that found on mature fibers.

### Graded in Four Groups

By the technique developed it is possible in the Laboratory and in several of the mills that have adopted the technique to grade cotton into at least four groups of relative maturity. No particular training is necessary for the observer provided only that he can distinguish between yellow-green, blue and purple.

## Micro-Manipulator Is New Instrument

Moves Cells Under Microscope;  
Operates With 0.000025  
Inch Accuracy

One of the features of this evening will be the showing of a Micro Manipulator. This device, which has recently come into use in biological science, enables investigators to reach into living cells placed under high power microscopes, and move the different parts of the organism about.

By the use of capillary needles made of fine glass, microscopic particles of the cell can be removed, or substances can be injected to note the effect on the living organism.

### Accurate to .000025 Inches

The instrument is extremely delicate and sensitive. Fine screws move the needles with an accuracy of .000025 inch, and by observation under high power lenses, its movement can be controlled to pick out the desired particles. This instrument promises to be of great aid in the study of biology.

Through its use, microscopic animals and living cells can be subjected to selective degradation in an effort to find what parts of the cell are necessary to continued life. Many problems long debated in biological circles may be solved by its use.

### See Single Celled Animals

The Biology Department of Technology also plans to show numerous organisms, far too small to be seen with the unaided eye. By means of a micro-projector, parasites, amoeba, flagellates, and many other single celled animals as well as the more complex structures will be projected on the screen.

This enables all to see just what the biologist observes under high power microscopes.

## Radio, Telegraph Used By The Tech

Day's Happenings Broadcasted  
And Telegraphed To  
Main Lobby

Radio broadcasting through Main Lobby of the Institute and Walker Memorial and the telegraphic transmission of all of the news events of the day feature The Tech's part in today's Open House.

The crew race on the Charles River, the Technique Rush, and the track meet with Bates College are being described while they happen by means of a portable broadcasting outfit constructed and operated by members of the staff.

### Simplex Machine in 4-138

In addition to the broadcasting, The Tech has had a Simplex telegraphic outfit installed from its news office to Room 4-138 through the courtesy of the Western Union.

### Visitors Give Messages

By means of this, it is possible to send messages back and forth concerning the events of the day. Visitors are being allowed to give messages for transmission.

The broadcasters will be out in a launch during the crew race and will send out the account of happenings to the roof of Walker Memorial where it will be picked up and relayed to the Main Lobby and to the Walker amplification system.

### Sport Broadcast

Thus, persons in both the main buildings and in the dining halls will be privileged to hear a "length by length" broadcast.

In addition to the Simplex machine, Room 4-138 has an exhibition of old volumes of The Tech, and other material of interest for those curious about newspaper work.

## Building Materials Laboratory Exhibits Brick, Mortar Tests

Porosity, Void Ratio, Density,  
Rate Of Absorption  
Determined

Many eminent professional societies from all types of industries have shown an interest in masonry research during the past few months.

Here at Technology, the Building Materials Laboratory in Room 4-033 has been busy testing bricks, mortar, and brickwork since it was established three years ago.

Under the supervision of Walter C. Voss, Professor of Building Construction, and his assistant, Robert M. Becker, many different kinds of mastics, flashings, and wall sections have been built and tested.

### Properties Tested

They have arranged to show a complete exhibit of the tests made upon a lot of bricks during its investigation. Among the properties studied are porosity, void ratio, density and rate of absorption of water.

### Bricks First Sorted

The brick are first sorted as they come from the manufacturer, all broken and cracked ones being discarded at once. Then they are weighed

## Technology Graduate Wins Award in Bridge Designing Competition

Jerome M. Raphael, '34 Is Given  
First Prize In A.I.S.C.  
Contest

Jerome M. Raphael, '34, a student at the Institute, won first prize in the seventh annual bridge design competition held by the American Institute of Steel Construction. Alexander Matthews, Jr., a student at the Yale School of Engineering, won second prize. First honorable mention was given to David Hiat of New York University, and second honorable mention to Fred A. Thompson, Jr., of Iowa State College.

The problem was to design a steel grade crossing elimination bridge carrying a highway over a railroad and another highway parallel to the railroad. In addition to giving students certificates of award, the first prize carries a cash compensation of \$100 and the second prize \$50.

These awards were made from the 10 best designs selected in a preliminary competition when 94 students from 22 colleges in the United States entered drawings. The jury of award consisted of Dr. Shortridge Hardesty and E. R. Needles, consulting engineers of New York; H. Craig Severance, J. Andre Foulhoux, architects of New York, and A. Lawrence Kocher, managing editor of The Architectural Record.

Raphael is the son of Mrs. George Raphael of 152 Homes Avenue, Dorchester. He was graduated from Technology last year with the degree of bachelor of science in architectural engineering, and is now studying for his master's degree, doing much of his work in the department of civil engineering.

and measured: six specimens which are very closely the same in density are chosen from those submitted.

### Absorbometer Test

These are remeasured and tested in the Absorbometer for their rate of absorption of moisture. This machine automatically records the changing weight of a brick as it soaks up water. Mechanical strength tests such as modulus of rupture and compressive strength, are next made. Thin sections taken from the broken halves are examined microscopically so as to learn the condition of the bond layer between the brick and the mortar.

### Test of Assemblages

Other brick from the shipment are made up into assemblages which after appropriate ageing and curing are broken by tension, and their bond strength computed. This afternoon and evening, the men in the laboratory will demonstrate their methods through actual testing operations on mortar flow, brick density, absorption and bond strength.

### Microscopic Sections

Slices showing microscopic views of the bond layer between mortar and brick will be shown to the public. The curing room, with its apparatus for controlling the humidity and temperature of the atmosphere, will be open for inspection.

## Cape Cod Canal Model Displayed In Building 20

Engineers To Study Effects  
Upon Cape Waterway  
If Enlarged

Prof. Reynolds Heads Project

Cape Cod Canal and Buzzards Bay are shown in a huge scale model being built in Building 20, to enable engineers to study in advance the effects of the proposed enlargement of the waterway.

The model of the canal will show it as it will appear, widened to 700 feet on the surface and dredged to a depth of 40 feet.

### To Accommodate Liners

This enlargement will provide a waterway capable of accommodating most of the large liners, as well as naval vessels. The model will be 115 feet long and will occupy all of Building 20, which has been set aside for this research.

### Directed by Prof. Reynolds

The project is under the direction of Professor Kenneth C. Reynolds of the Department of Civil and Sanitary Engineering, who is co-operating with Colonel John J. Kingman of the United States Army Engineers Corps in a study of the hydraulic problems that will be encountered in enlarging the canal.

### Work to Last Several Months

Lieutenant E. C. Harwood is supervising the study for the government, and Donald F. Horton is his representative in residence at the Institute. The work is expected to last for several months.

The complex nature of the investigation is indicated by the fact that the average rise and fall of the tide in Cape Cod Bay is five feet greater than in Buzzards Bay, thirteen miles distant through the canal.

### Difference in Time of Tides

There is a difference of three hours in the tide times in the bays. As a result, the tide in Buzzards Bay is rising while the sea is still falling in Cape Cod Bay, and the tide in Buzzards Bay begins to ebb several hours before high water at the other end of the canal.

### Nine Foot Tide Differences

Occasionally, under unusual conditions of flood tide driven by high winds, maximum differences in level of nine feet between the bays may occur.

At high tide in Cape Cod Bay the water rushes westward through the canal to the lower level in Buzzards Bay. Six hours later the current reverses and flows swiftly to the east.

### Strong Currents

Under ordinary conditions the maximum velocity of these currents exceeds three miles an hour, while during storms it may reach nearly five miles an hour.

### Scale of Nine Feet to the Mile

The model will be built to the scale of approximately nine feet to the mile, and will be constructed of concrete and sand to form a channel accurately reproducing the curved path of the canal across the Cape.

(Continued on Page 3)

Cape Cod Canal

THE STORE FOR MEN

Jordan Marsh Company

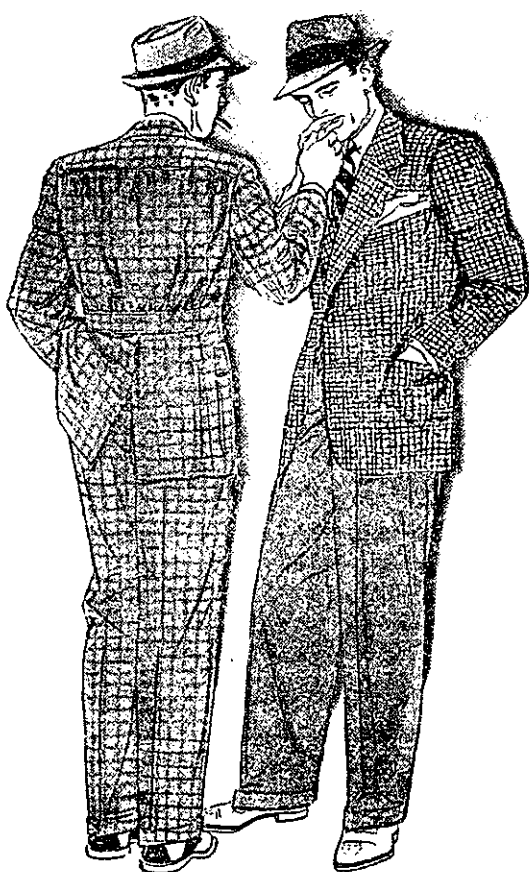
The place for smart

Sports Suits

\$25 to \$55

Until you've looked them over you won't realize the possibilities in our sports suits for young men. SPORTS BACKS in bi-swing, shirred yoke, vented and plain back models with saddle pockets. CHECKS and PLAIDS and plenty of blended grays and browns, TWEEDS AND SHETLANDS that do wonders to a fellow's wardrobe.

Second Floor—Store for Men





# Steam Engine Runs After Fifty Years

Built In 1885, The Engine Was Used As Testing Ground For New Designs

Still in operation, a steam engine invented fifty years ago that set new records of economy at that time and later became the "testing ground" for modern steam engine design, is being shown in the Steam Lab., in Building 3 today.

## Built in 1885

Built for the Institute about the year 1885, this engine is especially designed to facilitate experimental operation. The three cylinders develop 50 horse power each, running at a speed of 80 revolutions per minute.

Sizes of the cylinders are 9, 16, and 24 inches, with low, intermediate, and high steam pressures respectively. Connections are designed so that any or all of the cylinders may be used singly, or in any combination. In the customary operation, exhaust steam from the cylinders is admitted to the next larger cylinder, that from the largest going to a condenser.

## Steam Jacketing

Provision was made to allow reheating the steam between cylinders. Steam jackets are built around the cylinders, and these may also be used or not, depending on the operator's wishes. Steam pressure used is 160 pounds, in the high pressure cylinder.

Much of the experimental work on steam engine operation was done on this engine, and it was the testing ground for theories of design. Much of our present knowledge would have been delayed if it were not for the comparison of conditions and results made possible by this installation.

JACKSON & MORELAND

Engineers

# DIRECTORY OF EXHIBITS

## Building 2, Basement

Rooms 2-015, 2-019, 2-077 — Displays of Thesis Apparatus by Chemical Engineering Students: Cottrell Precipitation, Corrosion and Heat Treatment, Rubber Mill, Dropwise Condensation.

## Building 2, First Floor

Exhibit by Architecture Department; Architectural Designs, Drawing and Modeling, Painting of a Full-Length Portrait.

Room 2-170—Department of Mathematics: Talk by Prof. Weiner on Mathematical Puzzles, Exhibition of Harmonic Analyzer, Integrating Apparatus, and Other Computing Devices.

Room 2-110—Chemical Engineering Laboratory: Slugging, Tunnel Drying Leather, Wind Tunnel in Operation, Triple Effect Evaporation, Streamline Flow.

## Building 2, Second Floor

Room 2-219—Brownian Movement Exhibit.

Room 2-210—Qualitative Laboratories.

Room 2-245 — Freshman Hobbies Exhibit.

## Building 2, Third Floor

Drawing Rooms — Exhibitions of Work of Students in Descriptive Geometry and Drawing.

## Building 4, Basement

Department of Ceramics Laboratories open.

Room 4-007—Electric Smelting.

Room 4-041—X-Ray Examination of Metals.

## Building 4, First Floor

Room 4-138—Exhibition by The Tech: Simplex long-distance type-writing machine, Methods of Publication, Public Address System with News Flashes, Short Wave Reports of Crew Race and Track Meet.

Room 4-145—Heat Measurements Laboratory.

Freshman Chemistry Laboratories.

## Building 4, Second Floor

Room 4-270—Movies on Chemical Engineering.

Freshman Chemistry Laboratories.

## Building 4, Third Floor

Room 4-370—Exhibit and Lectures on Chemistry. Department of Geology Exhibit including Paleontology, Geophysics, Mineralogy, Dynamic Geology, and Petrography. Rooms 4-304 and 4-310—Optical Measurements Laboratory.

## Building 4, Fourth Floor

Laboratories of the Department of Chemistry.

## Building 6, Basement

This building houses research laboratories of Physics and Chemistry. Entrance to Spectroscopy Laboratory in Insulated Building. Exhibitions of Diffraction Gratings, Measurement of Spectra and Automatic Spectrum Measuring Machine.

## Building 6, First Floor

Models of Van de Graaff Generator.

Room 6-120 — Demonstration of Glassblowing.

## Building 6, Second Floor

Rooms 6-215 and 6-217—Exhibition of Gaseous Discharges, Fluorescence, and Photo-Electric Effects. Rooms 6-203 and 6-205—Electronics Laboratory.

## Building 6, Fourth Floor

Rooms 6-408 to 6-416—X-Ray Laboratories.

## Building 8, Basement

Room 8-010—Fire Metallurgy Laboratory. Lead Blast Furnace Run.

## Building 8, First Floor

Room 8-130—Gold Stamp Mill, Mineral Separation, Settling Power Tests on Minerals.

Room 8-105—Pottery Exhibit.

## Building 8, Second Floor

Room 8-201—Color Measurements Laboratory: Color Analyzer explained by Professor Hardy. Not a popular exhibit.

Room 8-205—Movies on Petroleum Production.

Room 8-210—Leaching of Copper Ores. Electrolytic Refining of Copper.

## Building 8, Third Floor

Room 8-330—Fire Assaying of Metals.

Room 8-308—Balance Room open for inspection.

Room 8-434—Metallography.

Room 8-410—Heat Treatment of Metals.

Room 8-405—X-Ray Examination of Metals.

## Building 10, Basement

Room 10-060—Dynamo Laboratory: Magnetic Frying Pan, Miniature Power System, Stroboscopic Measurements.

## Building 10, First Floor

Room 10-160—Measurements Laboratory: Transmission of Sound on Light Beam, Wave Form of Sound, High Voltage Display, Cathode Ray Oscillographs, Device to Measure Lung Power.

## Building 10, Second Floor

Room 10-250—Movies by Edgerton's High Speed Camera. Time: 3-4, 6-7, and 9-10 o'clock. Freshman Lectures on Chemistry. Time: 4-5 and 7-8 o'clock. Demonstration of Tesla Coil for High Voltage Discharges. Time: 2-3, 5-6, 8-9 o'clock. Room 10-275—Lecture Demonstrations by Members of the Sophomore Class chosen from the Physics Courses.

## Building 10, Third Floor

Room 10-338—Differential Analyzer. Computing Machine.

Room 10-395—Network Analyzer for Solution of Transmission Problems.

Room 10-385—Electrical Engineering Communications Exhibits. Means of Electrical Communication. Reaction Time by the Shock Method.

## Building 10, Fourth Floor

Department of Biology and Public Health: Biochemical Action by Wireless, Largest Known Coffee Extractor, Rats and Rickets, Health Education Movies, Germicides by Invisible Light, Brook Trout Exhibit, Micro-Projection of Living Water Animals, Micro-Manipulator.

## Building 11, Infirmary

A doctor and nurse are on duty to care for any illness. Punch served.

## Building 3, Basement

Room 3-050—Steam Laboratory. Engines in Operation. Miniature Locomotive on Track.

Room 3-003—Electronics Laboratory: Radio Tube Manufacture, Photo-cell Selector.

## Building 3, First Floor

Room 3-150—Steam Laboratory; Engines in Operation.

## Building 3, Second Floor

Room 3-270—Movies on Automobile Tests.

## Building 3, Third Floor

Room 3-305—Display of Signal Corps Equipment.

Room 3-310A—Display of Coast Artillery Instruments.

Room 3-370—Army Movies of the Functions of the Engineer Corps. Rooms 3-311 and 3-315 — Textile Laboratories.

Room 3-350—Machine Tool Laboratory: All machines running — Lathes, Grinding Machines, Milling Machines, Profiling, Broaching, and Automatic Gear Cutting.

## Building 5, First Floor

Museum of Ship Models  
Room 5-129—Movies of the Thorne-Loomis European Tour. Time and Motion Study.

## Building 5, Second Floor

Room 5-220—Naval Architecture Model Room.

Room 5-226—Building Construction Movies.

Room 5-240—Building Construction Exhibit.

## Building 5, Third Floor

Room 5-330—Movies by Department of Naval Architecture; "The Building of a Ship" and International Cup Races. Time: 3-5 and 8-10 o'clock.

## Building 1, First Floor

Room 1-110—Testing Materials Laboratory: Tensile Tests on Ropes, Bending of Beams.

## Building 1, Second Floor

Room 1-210 — Testing Materials Laboratory.

Room 1-223—Display of Army Ordnance Equipment.

Room 1-235—Building Construction Exhibit.

## Building 1, Third Floor

Room 1-310—Testing Materials Laboratory.

Room 1-334—Soil Mechanics Laboratory.

Room 1-345—Civil Engineering Department Exhibit: Designs and Apparatus, Model of Fifteen Miles Falls Power Development.

## Building 35

Welding Laboratory: Oxy-acetylene, Electric Arc, Electric Resistance, and Thermite Welding. Foundry and Forge Shops.

## Building 46

Refrigeration Laboratory.

## Building 33

Aeronautical Engineering Department: Wind Tunnels, Airplane and Engine Designs, Meteorology, and Gliders.

## Buildings 20 and 21

River Hydraulics Laboratories. River and Canal Models with Flow over Weirs.

## Hangar Gymnasium

Display of Chemical Warfare Equipment, Miniature Sandbox Firing Range, Searchlight and Guns on Exhibit.

Wrestling, Boxing, and Fencing Exhibits.

## Charles River

Crew Races: Harvard, Cornell, Syracuse, and Technology. 2:30 o'clock.

## Coop Field

Lacrosse Game. Technology vs. Williams at 2 o'clock.

## Walker Memorial

Walker Gymnasium—Tea Dance at 4 o'clock. Sports Review at 7:30.

Entertainment by Musical Clubs and Tech Show at 8:30 o'clock.

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BOSTON - NEW YORK



Vol. LV

MAY 4, 1935

No. 24

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## Offices of The Tech

News and Editorial—Room 3, Walker Memorial, Cambridge, Mass.

Telephone KIRKland 1882

Business—Room 301, Walker

Telephone KIRKland 1881

SUBSCRIPTION, \$1.80 Per Year

Published every Tuesday and Friday during the College year,  
 except during College vacation

Entered as Second Class Matter at the Boston Post Office

Member Eastern Intercollegiate Newspaper Association

In Charge of this Issue: Ralph D. Morrison, Jr. '37

## SEE TECHNOLOGY FIRST

## DEVELOPING INTELLECTUAL BREADTH

TODAY Technology opens its doors to the public in order that the vast facilities for learning housed here, may be inspected. Young men from high schools and preparatory schools around Boston annually avail themselves of this opportunity to see at first hand the results of research and study at the Institute during the past year. Technically minded laymen and scientists from other colleges are also present to review Technology's educational plan.

Open House also offers an opportunity for students here to get acquainted with the work in departments other than their own in a most interesting fashion. The greatest danger to the student of a technical school is that of specialization and intellectual narrowness. The great amount of information in the student's own field which must be learned in the short space of four or five years leads the student to neglect the broadening of his mind which differentiates the outstanding from the mediocre engineer or scientist.

An engineering education, regardless of the field studied, consists fundamentally of the acquisition of an understanding of a few basic natural laws. Specialization is familiarity with the unique applications of these basic laws to the problems of the chosen field. Very often applications that may seem unique to one field prove to be of great value in other fields. Thus the engineer or scientist whose education has been a broad one very often finds himself distinctly in an advantageous position when new problems are presented to him.

Today the work of students in all fields of science and engineering is on display. We hope that the exhibits will be patronized not only by the public for whom they were designed but also by our own fellow students seeking to widen their intellectual background.

## HUMANITIES AND THE ENGINEER

## BROAD EDUCATION NEEDED

GENERALLY recognized among prominent executives in our national industries is the opinion that a complete education for the engineer must include a study of what are vaguely termed the humanities.

Alex Dow, President of the Detroit Edison Company, presented a typical example of the belief prevailing among leaders of industry toward a broader education of the engineer in an article which appeared in the A. I. E. E. publication "Electrical Engineering" for December, 1934.

Mr. Dow maintained that a study of the humanities would better enable the engineer to solve problems in human nature. He said the successful engineer "will surely in time be offered opportunities wherein he will need the aptness of the executive who knows that it is imperative to decide quickly, even though the decision may be imperfect; he will see that he must avail himself of other human beings as assistants or delegates, even though these are not to his heart's desire; and find that he must recognize and allow for an infinity of variables, requiring of him at the one end of his knowledge of the humanities, a silent comprehension of mass psychology, and at the other end an occasional outspoken exhibition of what is colloquially called 'horse sense'."

The word, humanities has been indefinitely defined as a term used in connection with the culture which rests in general upon a classical training. In truth, the humanities are those branches of knowledge which tend to develop the qualities which are most characteristic of the cultivated man.

The study of the humanities, or humanism, may be defined in general as any system of thought or action in which man, his interests, and his development, are made dominant. Walter Lippmann has said "humanism takes as its dominant pattern the progress of the individual from helpless infancy to self-governing maturity." The relation of a study of the humanities to a complete knowledge of people and thus to a more probable success in leadership is obvious. Truly, then, a finished study of the humanities will better enable the engineer to understand more fully problems of human nature and to comprehend more easily the actions of his fellow men, resulting in an improvement in his capacity to act as a leader. But time, unfortunately, does not permit such a study.

It follows that the engineering school must select such subjects within the humanities as will best benefit the student, providing him with an education with which he is more properly fitted to understand human relationships and thus to meet problems of life. Instruction in the correct studies should be made available to all active students during his short four years of higher education.

The selection of non-technical subjects should not be left to the student's unguided judgment; in the choice of these all-important humanities. The school should provide a well-rounded schedule of studies in the humanities to be included in the curricula of all students.

Language, including English and at least one foreign language; business subjects, including accounting and bookkeeping; economics; and a general study of history are recommended as subjects to be contained in the student engineer's curriculum.

As is suggested by Mr. Dow, history should serve as a background for all instruction in the humanities. History can be tied directly to any single type of study in the humanities. It can form the basis of all teaching. To accomplish this and, it should, of course, be properly taught, i.e., in such a manner that the correct relations existing between it and the subject classified beneath it are clearly brought out.

With The American  
College Editor

## STILL DEPRESSION BABIES

Spring of every year sees a great, new and ever-increasing flood of embryo business men and women, doctors, lawyers, and engineers graduated by the universities of this continent. They are supposed to take their place in civilization—somehow or other civilization has had little or no place for them during the past five years. What to do?

The younger generation may very fairly place the blame for their dilemma upon the shoulders of those who are directing the destinies of the nations of the world. They at least had a start in the world, even if they feel the cold breath of adversity today—but their children can find little or nothing to do in the everyday business world. It is up to them to remedy this situation.

The governments of the world are at last doing something about the situation—whether they will eventually be successful can not be said with any certainty. They are trying. Even if they do succeed, the present generation graduating from college will not feel the benefits of their efforts. Something must be done in the meantime that will go into action immediately. There are many people in the business and professional worlds who are still earning far far more money than they actually require to lead a comfortable and happy life—Let them give a helping hand to those who are just starting their career in the world. Let the Doctor or Lawyer with the large and lucrative practice take some youngster just starting for himself, and give him a boost up.

The business man must realize that it is a poor way to economize by refusing positions to those who eventually will take their place when they are gone. Who knows how much of this depression would not have been avoided if many of the best and most able of the present generation of fathers and mothers had not died in the war. Do we wish this to happen again as the result of our own acts? Surely not.

—McGill Daily.

## Then and Now

"If rational men co-operated and used their scientific knowledge to the full, they could now secure the economic welfare of all."

—Bertrand Russell

"Worlds arise when many bodies are collected together into the mighty void from the surrounding space and rush together. They come into collision—and from their entanglement the heavenly bodies arise."

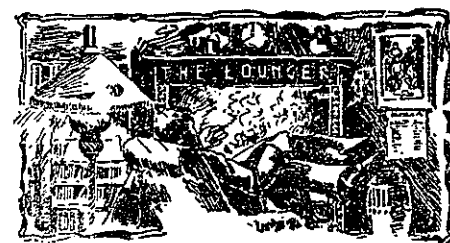
—Leukippos 400 B.C.

"Do not get rich by evil actions, and let not any one ever be able to reproach you with speaking against those who partake of your friendship."

—Thales

"Dogs bark at every one they do not know."

—Herakleitos



## Veritas

Some philosophically inclined theorist with radical tendencies once remarked that a little truth is a dangerous thing. The lounge column was instigated away back in about the paleolithic period of the Institute to reveal the maximum truth with the minimum of danger to the columnist. For that reason, the Lounge is an anonymous person (we hope) to the majority of Technology students.

Our writings are usually humorous. We have found that when we produce a straight edit column, everyone looks for the double meaning. Only a few weeks ago, we deplored the vote of the girls from Wellesley to "bear arms in case the United States were invaded." And just to prove that we weren't entirely destitute of a liberal education, we added "id est, pugnare". Next day, everyone was laughing at the Good Joke.

## Open House

Anyhow, we're going to try to give you an inside impression of Technology which is just a bit more than the average Open House visitor perceives. We've met literally hundreds of people who came to Open House, and went away with the idea that Tech is a sort of conglomeration of long corridors. Van de Graaf "man-made lightning, at last man is rivaling and outdoing Nature", airplane wind-tunnels, more corridors, and mercury vapor lamps. The last are those horrid lights that make you look like a cross between an anemic green cheese, and the Bride of Frankenstein.

Those grim looking young "soldiers" in uniform are not stationed around Technology to guard its secret formulae and priceless equipment. In the first place they are not soldiers, but R. O. T. C. freshmen, and in the second they are not "guarding", but "guiding". They probably have enough trouble guarding themselves against the winsome misses who think their uniforms are just too cute. The guides can tell you where Rooms 10-250, and 5-330 are, and can direct you to buildings 1, 2, 3, and 4, but you get into difficult numbers like 6-312, and 35-108, they're a bit confused.

## Seeing the Institute

We realize, of course, the difficulty which a visitor for the first, or even the fifth time to Open House experiences in getting around to see all of the important exhibits. So we'd like to give just a few words of advice. Read the programs, and follow them. See the non-technical exhibits, as well as the technical ones. After all, you can see the model boat exhibit at any time, but if you miss the Technique Rush, or the Tech Show skits, you're out of luck. And of course, if you don't know your way around, you can ask the guides. The composite advice of three or four should get you where you're going.

## Frosh Antics

Now that we've got the serious part of our column off, we can relax a bit. The freshman class, we hear, is running an exhibit of their hobbies. Well, we're somewhat doubtful, because we've got an idea that if all of the freshman hobbies were laid end to end in the Main Lobby, Dean Lobdell would make all the girls get right up and go home. And speaking of that method of making generalities, if all of the people who come to visit Open House today were laid end to end tonight, they would be darn glad to get off their feet.

## Co-eds

As you may be aware from information contained elsewhere in this issue, Technology has been blessed with a number of co-eds. That is, there are a number of co-eds; we haven't made up our mind yet whether or not their presence is a blessing. Of course, we have whiled away many an idle hour by proclaiming to the world in this column their faults and somewhat doubtful virtues. So we do feel a bit thankful for them, because whenever the freshmen, or Tubby Rogers, or Professor Wiener fail to do anything sensational to comment on, we can always fall back on a minor scandal of the Margaret Cheney room. Incidentally, we have found out why co-eds as a rule do better in their

studies than the male students. As they obviously could not have been vamping the profs, we conclude that it is because the boys are handicapped by going out nights.

We have just had a staggering proof of mental telepathy. We had no sooner started in on this paragraph regarding the co-eds than up came one who has been typing at the other end of the office and wanted to know what we were writing about the co-eds. That's not a coincidence, because it has happened before. Ah science!

## Science and the Public

The Department of Mining and Metallurgy, which has the most imposing name of any department, with the exception of the Department of Business and Engineering Administration, is repeating its usual exhibit of the process of extracting gold from ores. Every year, they lose about ten per cent of the ore, to visitors who stealthily look around to see if anyone is looking, then appropriate a piece to take home and show everyone what real gold ore is like. Well, sci-

(Continued on Page 5)

## Reviews and Previews

## METROPOLITAN

"G Men" describes the unrelenting fight of the United States Federal agents against the vicious gangs and mobsters with James Cagney in the role of the government agent. Margaret Lindsay, Robert Armstrong, Ann Dvorak are in it.

Isham Jones and his orchestra, with a pretentious stage show, offer a series of their own compositions in their personal appearance. Every evening following the last stage presentation, the orchestra will play for free dancing in the Platinum salon.

## KEITH MEMORIAL

"The Bride of Frankenstein", sequel to Boris Karloff's original film, tells of the monster's escape from death and his subsequent terrorizing of the countryside, while mad scientists collaborate to create a mate for the lumbering giant. Karloff, of course, again has the lead with Colin Clive and Valerie Hobson in the cast.

## LOEW'S STATE

"Baby Face Harrington" concerns a small-town clerk who becomes innocently involved with a dangerous gang of hoodlums and is suspected of being their leader. Charles Butterworth and Una Merkel have the honors.

"Let's Live Tonight" is a light-hearted comedy with Tullie Carminati as a man-of-the-world gentleman who believes that no one should take love seriously after his twenty-first birthday. Lillian Harvey is his nemesis.

## RKO BOSTON

"The Lost City" deals dramatically with a mysterious doctor who, with the forces of science at his command, threatens to wreck civilization unless it accepts him as world dictator. Havoc is wrought in the efforts of the world to stop him. William (stage) Boyd, Claudia Dell and Josef Swickard are featured.

"The Nut Farm" an adaptation of the stage play, portrays what happens to a grocer's family when his wife induces him to invest his life savings into a moving-picture in which she is to make a screen debut. Wallace Ford has the leading part, which he also had in the original production.

## PARAMOUNT-FENWAY

"Go Into Your Dance" with Al Jolson and Ruby Keeler has the famous married pair in a musical comedy, which is quite interesting. We might suggest, however, that Jolson is not what he used to be. Ruby is clever on her feet.

"A Notorious Gentleman" is a mystery drama with a romance angle. In the cast with Charles Bickford and Helen Vinson are Sidney Blackmer and Onslow Stevens.

## MODERN

"Black Fury", the powerful story of labor struggles in the coal fields of Pennsylvania, gives Paul Muni the opportunity to display his talents for heavy dramatics.

"Traveling Saleslady", has Joan Blondell and Glenda Farrell in a comedy about the new method of selling toothpaste.

## LOEW'S ORPHEUM

Jean Harlow and William Powell are entertaining in "Reckless" the story of a beautiful blonde dancing star who rises to the heights of Broadway. The usual vaudeville bill accompanies.



## Buses Which Will Serve as Student Hotels and Trains on Exhibition

Two buses which will serve as both hotel and train for twenty-four Technology students traveling through Europe this summer will be part of the exhibit of the Department of Business and Engineering Administration. Members of former tours will set up these buses outside 69 Massachusetts Avenue and demonstrate their facilities for camping and traveling which make this nine weeks' industrial tour of Europe available at a cost of \$360 per man.

A pictorial record of last year's trip will be shown in Room 5-129 by means of movies taken by members of the tour.

### Visit Foreign Plants

This year's trip, which is sponsored jointly by the Department of Business and Engineering Administration and the Thorne-Loomis Foundation, includes visits to thirty European man-

ufacturing plants located in England, Scotland, Norway, Sweden, Denmark, Germany, Switzerland, France, Belgium and Holland, besides visiting the scenic points and places of historical interest in these countries.

The group will embark from New York June 4th on the "S. S. Statendam" and will land in New York again August 10th.

For a remarkable display of American ingenuity in making a camping trip comfortable and convenient, these buses have to be seen to be appreciated. When camp is to be made, the entire bus may be completely enclosed by heavy canvas and transformed into a spacious tent.

With a little training in motion study, ten men are able to transform an ordinary appearing motor bus into a complete and comfortable camp in less than five minutes.

## Machine Invented To Measure Wave Length Of Lines of Spectrum

### Spectrum Measurements In Past Required Period Of Several Days

Automatic measurement and computation of spectral wave lengths is accomplished by a machine recently invented by Prof. Harrison of the Institute. The device may be seen in the spectroscopy laboratory in the basement of Building 6.

To measure a spectrum in the past, the photograph of the lines was placed on a comparator, a delicate machine capable of making measurements to within 1/25,000th of an inch. The distances of the spectrum lines from some of the standard lines were observed and recorded to six or seven decimal places.

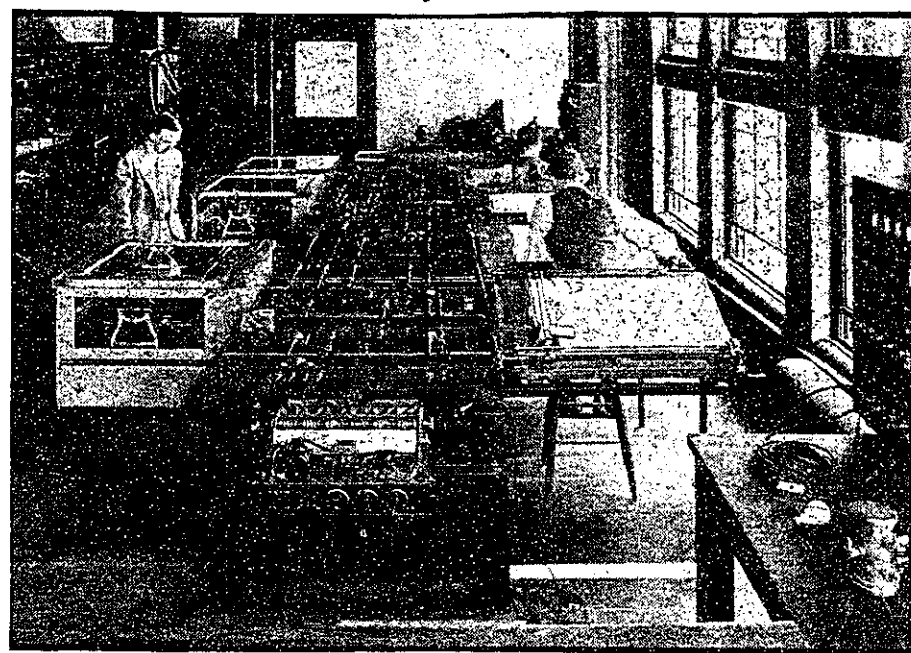
By this method, the task of measuring the many lines that appear on most plates often required several days. Also several measurements of each plate had to be taken to eliminate the errors caused by temperature changes in the mechanisms used.

### Measurements Speeded Up 20 Times

The new machine, which is on display today, although it is still in the process of development, takes measurements 20 times as fast as any other methods and produces results that are twice as accurate. It is expected the further developments of the machine will make it 200 or more times faster than the old method.

editor of the Rumor recklessly throwing caution to the winds, and making a number of smutty accusations, we feel impelled to point out to him that persons who live in glass houses should make sure it's shatter proof glass. So we might remark that the aforementioned editor in company with two other dorm residents two weeks ago dated up the "Three Little Maids", whose "better-business drive" in the dorms has become well known, and discussed problems of the day with them for some time in an establishment over near Beech Street.

## Differential Analyzer



## THE LOUNGER

(Continued from Page 4)

ence is, as usual, one step ahead of the layman. You see, the very practical scientists have substituted iron pyrites for gold ore.

### Voo Doo

It would not be quite fitting to close a resume of Technology life without mention of Voo Doo. We do not know just how to approach the subject, because we don't know just how Voo Doo is going to refer to The Tech in their Open House issue. But just in case they should decide to present to the esteemed public for whose eyes this column is intended, a false and derogatory view of a serious and honored publication, we might remind them of the fact that he who defames his rival in public had best wash his own windows first.

### Definitions

For the benefit of those people who like to use collegiate slang, we offer

the following technical expressions. A "bugger factor" is that quantity which a student inserts in a problem to make his answer agree with the one in the book. A "brown bagger" is a student who doesn't know what a bugger factor is. The R. O. T. C. is an institution which the average student wants abolished on grounds of international peace and such, but would complain about if this favorite topic for soap-box discussion were removed. And the Hydraulics lab is the place which Open House visitors come to when they want to get somewhere else.

### Scandal

Certain amateur journalists (of the "small town" species) with aspirations for fame and a propensity for Walter Winchellising the activities of the dorm men, have turned out a Dorm Rumor, which reads like a dictaphone record of a Stitch and Chatter Sewing Circle meeting. The Lounger has been blamed for many things, but we have to a great degree preserved the standards of good taste by avoiding the use of names. So when we see the new

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# TECHNOLOGY DINING HALLS

Walker Memorial Building

## Awarding of Rifle Medals to Frosh Team Ends Season

Crack Varsity Rifle Team Holds Annual Banquet May 14th

Season's Record Best Ever

With the awarding of the Tyro Medals to the victorious freshman rifle team on last Wednesday afternoon, the semi-final chapter in rifle history for the 1934-35 season was brought to a successful conclusion. Miss Mary Compton, daughter of President Compton, acting as honorary Colonel of the Technology R. O. T. C. units presented David C. Whitaker, Harold E. Cude, Jr., John Sarano and Lloyd M. Hier with the coveted awards at the Corps review at that time.

These Tyro medals are presented each year by the National Rifle Association to the winners of the nation wide postal rifle championships. The Beaver freshmen met some of the best teams of the country in this series, including American Legion Clubs, amateur clubs and teams from other schools and colleges. The American Legion Unit of San Francisco, California was barely nosed out by the Frosh by a margin of one point. Gordon L. Foote, the fifth member of the team was not present at the ceremonies.

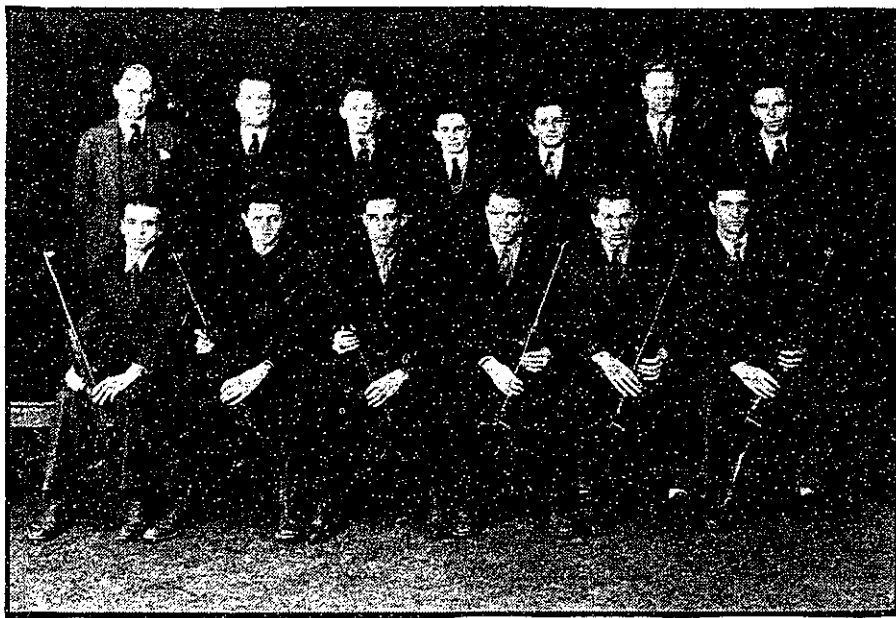
### Varsity Banquet Soon

The final chapter in this season's history will be written when the varsity rifle team meets on May 14th at the American House to hold its annual banquet. The team this year has concluded one of its most successful seasons ever, and has turned the longest string of wins of any Technology athletic team.

### Best Record Ever

The varsity sharpshooters have participated in twenty-nine shoulder to

## Beaver Sharpshooters



Front row left to right: Douglas Hawks, '36; Joe Keithly, '37; Charles Endwies, '36, manager; Lawrence Hall, '35, captain; Robert Greer, '35; Richard Denton, '36.

Top row: Captain J. F. C. Hyde, coach; Basil Martin, '36; Lewis Baldwin, '35; Harland Hubbard, '36; George A. Siegelman; Lawrence Peterson, '36; Sergeant H. F. MacDonnell, assistant coach; Robert Flood, '35; Richard Price, '35; Tom Kinraide, '37 and Charles F. Price, Jr., '36 were not present when the picture was taken.

shoulder matches, and of these they have won 26, and lost only three. In the postal matches, they have gone through the entire series without a single loss. All these victories have been earned through superior skill of marksmanship over teams of repute. In the shoulder to shoulder matches, the men have stacked up against Northeastern, Harvard, Syracuse, West Point, U. S. Coast Guard Academy, N. Y. U., Yale, Bowdoin, Norwich and a score of other college rifle teams, not to include the Charlestown Marines Unit, the Boston Yankee Division Club, and other amateur organizations. To show the keen competition met in these matches, it is interesting to note that three of the victories were won by a margin of three points or less.

## Fencing Team Holds Matches in Hangars

Saturday afternoon at 4 o'clock there will be exhibitions in fencing between both the varsity and freshman members of the team. The matches will be held in the Hangar Gym and will be supervised by Coach John Roth. The matches will be run off with the boxing and wrestling show also scheduled for the same time.

In addition to a successful season in dual meet competition, the team has acquitted itself well in various sectional and national competitions. The team placed first in the New England Rifle Team

## Baseball Team Formed at Tech

Nine Organized In Attempt To Obtain Recognition Of Sport Here

For the first time in several years, a baseball team composed of Tech undergraduates is playing a regular schedule of games this spring. The team does not officially represent the Institute, for any athletic team must carry on by itself without financial help from the school for two or three seasons before official recognition and monetary assistance are granted.

Accordingly the team plays under the name of the Cambridge Collegians, with its eligibility rules the same as those for Tech varsity sports.

To date two games have been played, with both having been victories for the opponents. Last Saturday Lowell Textile, one of the better college teams in this vicinity routed the Collegians, 19-0. Then on Monday the Tech players travelled to Harvard where they were defeated by the junior varsity team of that university by a 14-8 score. Saturday's downfall was due mainly to weak pitching and poor hitting, but at Monday night's practice, both of these departments were credited with good performances, while the fielding fell down badly.

### Five Games Left

Five games remain on the schedule, three coming next week. Boston University and Tufts junior varsities and Northeastern will be met in that order.

In general Tech teams are not very successful in the matter of wins and losses, the measure of success being the interest aroused in the particular sport. For this reason the question of recognition of baseball in the future as a varsity sport at the Institute will be decided, not on how many games the Collegians win, but on the extent and the continuance of the interest in the team.

## Stickmen Drop Return Match with Boston Club 11-6 After Game Fight

Tech Lacrosse Men Finish Up Battle With Four Goals In Last Few Minutes

M. I. T.'s lacrosse team bowed before the superior stickwork of the Boston Lacrosse Club, 11 to 6, Wednesday afternoon on the "Coop" field. The Technology team, composed chiefly of inexperienced men, warmed up slowly, scoring no points at all during the first half. In the second half, however, the Boston men began to tire and were outscored by Technology 6 to 4. The game was purely one of skill versus stamina. The Boston Club men were handicapped by their poor condition while the Tech men lacked knowledge of the game. The Technology team so completely outplayed their weary opponents in the second half, scoring 4 goals within a few minutes of the last quarter, that had the game not been cut short by lack of time, it is quite certain that M.I.T. would have tied, if not beaten, the Club.

The stars of the game were Dick Gidley and Bob Leventhal, each of whom scored two goals. Dave Mathias and Jack Colby each scored one goal. Bulkley, Crummey, Mathias, Forster, Colby and Gidley, all played the entire game. The Technology team has shown that it is improving and has given proof that it possesses all the requisites of a good team. If it continues in this definite upward trend, the game with Williams College Saturday ought to be very close, with a Tech victory in the offing. The M.I.T. players in last Wednesday's game were:

Defense: Jim Carr, Goalie; Jim Bulkley, Elmer Wirtz, George Crummey, Stan Zemansky. Attack: Capt. Red Forster; Halloran, Dave Mathias, Dick Colby, Charlie Gidley. Substitutes: Johnny Fellouris, Dick Morton, Dick De Wolfe, Leventhal.

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The thoroughness of the preparation given at this school is demonstrated by the fact that although the enrollment here is limited to one hundred and twenty-five students, we have had as many as one hundred and forty-two Chauncy Hall prepared students in attendance at the Institute during a single year.

At Chauncy Hall students are trained in correct methods of study, accurate habits of observation, sound reasoning, and clarity and conciseness of expression. In addition to thorough preparation in the entrance requirements, especial training is given in Mathematical and Scientific subjects beyond secondary school work, such as the efficient use of the slide rule, the art of report writing, the correct use of Laboratory instruments, the theory of error and precision of measurement.

Students planning to enter the Institute are advised to take an extra year of preparation at Chauncy Hall rather than to begin work handicapped by "Conditions" or by "Cram" courses taken during the summer.

If you desire the advantage of such training, write or telephone for an appointment.

FRANKLIN T. KURT,  
Principal.

553 Boylston Street  
Boston, Massachusetts.

# The Massachusetts Institute of Technology

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Options: Chemical Engineering	Options: Automotive Engineering	
Civil Engineering	General	
Industrial Practice	Power	
Mechanical Engineering	Production	
Chemical Engineering	Refrigeration and Air Conditioning	
Chemical Engineering Practice	Textile	
Civil Engineering	Military Engineering	
Options: General	Mining Engineering and Metallurgy	
Geodesy and Seismology	Options: Metallurgy	
Hydroelectric	Mining Engineering	
Transportation	Petroleum Production	
Electrical Engineering	Physical Metallurgy	
Communications	Naval Architecture and Marine Engineering	
Co-operative	Ship Operation	
Electrochemical Engineering	Sanitary Engineering	

Each of the above courses is of four years' duration, with the exception of Architecture, City Planning, and the Co-operative Course in Electrical Engineering. These three courses extend over a period of five years.

A five year course is offered which combines study in Engineering or Science and Economics or other social sciences. This leads to the degree of Bachelor of Science in the professional field and the degree of Master of Science in Economics and Engineering or Science.

Graduate courses leading to the degrees of Master of Science, Master of Architecture, Doctor of Philosophy, Doctor of Science, and Doctor of Public Health are offered. A course in Public Health is offered, which is essentially equivalent to that prescribed for the degree of Master of Science, and leads to a Certificate in Public Health.

Graduates of colleges or of scientific schools of collegiate grade, and in general all applicants presenting satisfactory certificates showing work done at another college corresponding approximately to at least one year's work at the Institute, are admitted to such advanced standing as is warranted by their previous training, and are given credit for our required subjects, including the entrance requirements, so far as they have been satisfactorily completed.

The Summer Session extending from June to September includes most of the subjects given during the academic year.

For information about the methods of admission from secondary schools, communicate with the Director of Admissions.

Any of the following publications will be sent free upon request:

- Catalogue for the academic year
- Summer Session Catalogue
- Architectural Education—Undergraduate and Graduate
- Educational Opportunities at the Massachusetts Institute of Technology
- The Graduate Schools of Science and Engineering

Correspondence should be addressed to the Director of Admissions



### Boxing Team Holds Special Exhibition Meet in Hangar Gym

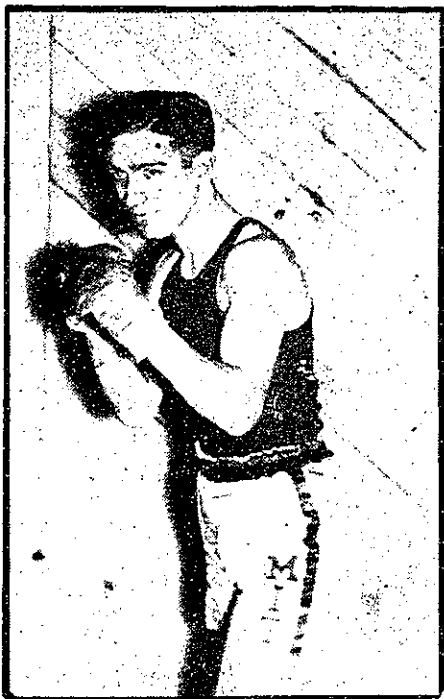
#### Wrestlers Also Put On Show At Four O'Clock In Hangar In Dual Affair

The Technology boxing and wrestling teams will put on an exhibition meet this afternoon at four o'clock in the Hangar Gym immediately after the Technique rush. Captain Nick Leftes will lead the Beaver leather pushers through their paces, while co-Captain Mardorosan of the wrestling team will be on hand to show how he won the New England Intercollegiate Wrestling crown in the 126 lb. class last March.

On the Boxing card, Dick Lucien, '38 and Paul Murphy, '38 will mix it up in the 135 pound class, while Fred Claffee, '37, and Don Gleason will swap blows in the 145 pound class. In the feature bout of the afternoon, the past season's captain, Nick Leftes, '36, will trade blows with captain-elect Elmer Wirtz, '37.

The wrestling card has not yet been announced, but Joe Heal, '37 and Jerry Webb, '37, together with Mar-

### Boxing Captain



Ex-captain Nick Leftes who will take on Captain-elect Elmer Wirtz for two rounds at 4 P. M. in the Hangar Gym.

dorosan will be on hand to give the sport fans a final climax to the afternoon sports.

The boxing and wrestling shows will be held simultaneously with a fencing exhibition by the fencing team. All events are scheduled to start at 4:00 P. M. Arrangements have also been made by The Tech to broadcast a blow by blow description of the boxing events by short wave.

Breakfasts 15c to 35c  
Luncheons 35c to 60c  
AT **Lydia Lee's**  
Opposite the Aeronautical Laboratory  
136 Massachusetts Avenue

## SPORTS COMMENT

Those among our visitors who are interested in sports can watch Tech athletes in four branches of sport in action this afternoon. The dual meet between the Tech and Bates track teams will probably draw the greatest number of spectators, chiefly because the track field is conveniently located and the program of events is varied. Coach Oscar Hedlund has some outstanding track and field men on his team, and their performances will be well worth watching. Jim Thomson, stellar high jumper and scorer of points in other field events, is one of the most outstanding entries. Captain Mort Jenkins, star distance runner, and Stan Johnson, Olympic prospect in the broad jump, give promise of turning in fine performances today.

\*\*\*\*\*

Many of you no doubt have heard of Anton Kishon, the Bates athlete who puts the shot for the Maine school. He will be here with the visitors and is a sure bet for first place in his shot put event. Kishon has been breaking records for hurling the iron ball ever since his high school days. He is now a sophomore at Bates and may well be a world champion before his collegiate days are over, so an opportunity to see him in action today should not be allowed to slip by.

\*\*\*\*\*

Out on the river this afternoon the Tech crews will be participants in a rowing regatta, together with Harvard, Cornell, and Syracuse. The Tech varsity, captained by smiling Al Mowatt from Swampscott, and stroked by Guy Haines, son of the Tech coach, is one of the lightest eights to represent M. I. T. in years. What they lack in power, however, is to a great extent made up in co-ordination.

\*\*\*\*\*

On the opposite side of Massachusetts Avenue from the Institute, two other Engineer athletic teams are competing against opponents from other colleges. A lacrosse team that has been steadily improving to date will cross sticks with Williams. Many of our visitors undoubtedly have never seen a lacrosse game. The sport, although popular in high schools in other parts of the country, is entirely limited to prep schools and colleges around here. Much of the rough play of football and hockey enters into the game, but the ball used is about the size of a tennis ball, and the method of carrying the ball toward the goal is by the use of nets with wooden handles.

### Bates Track Men Here For First Dual Meet Of Spring Session

#### Jenkins, Thomson and Johnson Expected To Star For Technology

Tech's track men will give Bates plenty to worry about this afternoon at the meet to be held at the Technology field at two P. M.

Oscar Hedlund, M. I. T. track coach, is basing most of his hopes on his triple threats, Captain Mort Jenkins, Stan Johnson, and Jim Thomson, Captain Jenkins outstanding runner of the team this year, last Saturday overcome an injury which had laid him up all winter and won the 800 meter run in the Greater Boston

(Continued on Page 8)

Track

### The First Church of Christ, Scientist

Falmouth, Norway and St. Paul Sta. Boston, Massachusetts

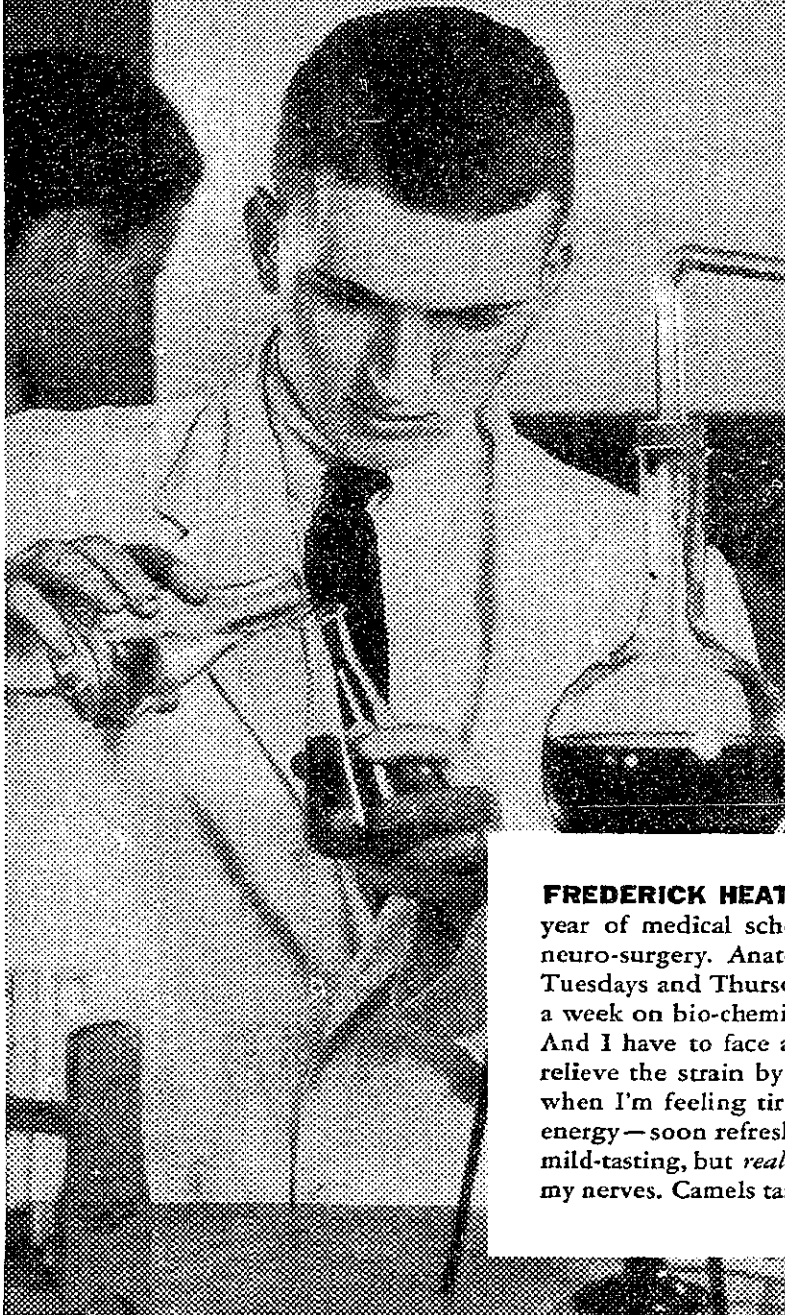
Sunday Services 10:45 a. m. and 7:30 p. m.; Sunday School 10:45 a. m.; Wednesday evening meetings at 7:30, which include testimonies of Christian Science healing.

Reading Rooms—Free to the Public, 333 Washington St., opp. Milk St., entrance also at 24 Province St., Staller Office Bldg., Park Sq., 60 Norway St., cor. Mass. Ave. Authorized and approved literature on Christian Science may be read, borrowed or purchased.



UNDER  
A STRAIN ? . .

GET A LIFT  
WITH A CAMEL !



**FREDERICK HEATH—MEDICAL.** Heath says: "I'm in first year of medical school now, with the idea of specializing in neuro-surgery. Anatomy 'lab' takes three afternoons a week. Tuesdays and Thursdays—embryology. I spend three mornings a week on bio-chemistry, three on physiology 'lab' and lectures. And I have to face an exam in about one subject per week. I relieve the strain by smoking Camels. I prefer Camels, because when I'm feeling tired or distracted they unlock my supply of energy—soon refresh me. Camels are extremely mild. Not just mild-tasting, but *really* mild. They never tire my taste or get on my nerves. Camels taste so good 'I'd walk a mile for a Camel!'"



**SOCIAL LEADER.** "The minute I begin to feel tired, I stop and smoke a Camel," says Mrs. Ludlow Whitaker Stevens, of New York. "Fatigue disappears. It's remarkable the way Camels renew your energy."

**STAR PITCHER.** "I like Camels, and I've found that after a hard game a Camel helps me to get back my energy," says Carl Hubbell, star pitcher of the N. Y. Giants. "Camels are so mild they never ruffle my nerves."

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Winston-Salem, N. C.



## CAMEL'S COSTLIER TOBACCOS NEVER GET ON YOUR NERVES!



## Four Colleges Enter Crews In Regatta Today

Syracuse, Harvard, Cornell And  
Technology Meet On  
Charles At 2:30

Tech May Provide Surprise Win  
(Continued from Page 1)

Harvard, Princeton and Yale. The meet with the first two colleges was held last Saturday in competition for the Compton Cup, and in spite of last minute changes in lineup due to sickness, and in spite of the unusually light weight of men on the boat, the Beavers provided one of the most thrilling races ever witnessed in the Charles River basin.

### Compton Cup Race Thrilling

Princeton got away to a fast start and led the Beavers by several feet, but the supposedly superior Tiger crew was not able to increase this lead even after the half mile marker had been passed. At this point there was no open water between any of the boats. However, passing the Harvard Bridge, the heavier Princeton boat slowly drew away while the Harvard boat crept up abreast of the Beavers. In the last few minutes, Harvard pulled away and followed Princeton across the finish line while Tech made a gallant but futile effort to overtake their Crimston rivals. The race was surprisingly close, in spite of the weight handicap and the fact that Guy Haines, son of Coach Guy Haines, was forced out of his regular berth as stroke by an attack of measles in the early part of the week.

With Haines out, Captain Al Mowatt was hurriedly moved from No. 2 to stroke, and in spite of the short notice, he acquitted himself well.

To fill in Mowatt's place at 2, Willard Bixby, '35 was moved up, from the J. V.'s. "Bix" did such a good job in the pinch that Coach Bill Haines has given him a regular berth on the boat at number 2. Captain Mowatt has been permanently moved up to six while Birch formerly at six has gone back to the J. V.'s.

### Other Crews Inexperienced

Last Saturday Cornell was badly beaten by the powerful Navy crew, being led across the finish by 3 lengths. Syracuse has not as yet had its first race, but nevertheless its chances for a victory loom up as best. Harvard has had only one meet this year, and that was the tri meet with Tech and Princeton.

### Time Trial Fast

On last Thursday and Friday nights, the varsity boat held time trial, the results of which were not revealed. However, judging from the twinkle in Bill Haines' eye, and from the general optimism around the boat house after the runs, the results must have been quite satisfactory to all parties concerned. Earlier this year, the boat lowered the old varsity record over the Henley distance, and with favorable conditions this afternoon, Tech may chalk up a record for the 1 1/4 mile course and provide a big upset.

### Lineups

The lineup for the race this afternoon will be: Al Hazeltine, '37, of Westfield, New Jersey at No. 1; Bix Bixby, '35 of Baldwin, New York at No. 2; Bob Ferguson, '37 of Rye, Connecticut at No. 3; "Whit" Stueck, '35 of Great Neck, New York at No. 4; Bob Thorson, '37 of Medford, Mass. at No. 5; Captain Al Mowatt, '35 of Swampscott, Mass. at No. 6; Art Haskins, '35 of Chicopee, Mass. at No. 7; Guy Haines, '35 of Newton, Mass. at stroke; and Art Hunt, '37 of Mt. Hermon, Mass. at Cox.

The crew races are scheduled to

## Roger Needham '36 Elected Gym Captain For 1935-36 Season

Jack Flaitz Awarded A.A. Medal  
At Annual Banquet Held  
Last Thursday

Roger Needham will captain the Technology Gym Team next year, and Jack Flaitz, Soach Neudorf's star tumbler, was awarded the varsity club medal as the result of the elections held at the annual gym team banquet at Hotel Minerva Thursday night. Needham's specialty is the flying rings. Paul Vogel was announced as next season's manager.

The varsity team in full will put on an exhibition in the Walker Memorial Gym at 7 o'clock tonight. Ex-captain Ernie Van Ham will head the list of gymnasts, going through his routine on the flying rings with Needham. The others in the exhibition will include Dick Lewis and Dave Werblin on parallel bars, Jack Flaitz, tumbling and Harold Miller on the horizontal bar.

Herbert G. Forsell of Dorchester will fill the shoes of Hans Neudorf as coach of the gym team next year. Neudorf resigns after coaching the Institute teams for many years.

## Track

(Continued from Page 7)

Intercollegiate. Today he is entered in the half mile and mile runs and will probably finish with the honors again.

Jim Thomson, Tech's star weight man, broke the Institute's discus throw record last week at the G. B. I. contest. Thomson, president of the sophomore class, is entered in field events and will have to contend with Kishon of Bates for the laurels in the weight throws.

start at 2:30 o'clock according to the following schedule:

2:30 P.M. Frosh 150 pound crews.  
3:00 P.M. Varsity 150 pound crews.  
3:30 P.M. Frosh heavies.  
4:00 P.M. J. V.'s.  
4:30 P.M. Varsity.

All 150 pound crews will race over the Henley distance of one mile and five sixteenths. The varsity, junior varsity and frosh heavies will race over the mile and three quarter distance. Spectators may watch the finish of the 150 lb. races just opposite Walker Memorial. The finish of the other races will be further down stream just this side of the Longfellow Bridge.

The junior varsity lineup has also been changed during the past week, with the dropping out from crew of Tom Graham and Bob Olson. Birch has been moved into No. 6 from the varsity boat, while Patterson has been moved up from the third varsity boat to No. 4. Bixby has been moved up from the J. V.'s to the varsity boat.

The lineup for the race follows:

No. 1, Easton; No. 2, Pratt; No. 3, O'Connor; No. 4, Patterson; No. 5, Lowenstien; No. 6, Birch; No. 7, Seelman; Lawrence, stroke, and Hubbard, Cox.

### 150 Lb. Lineup

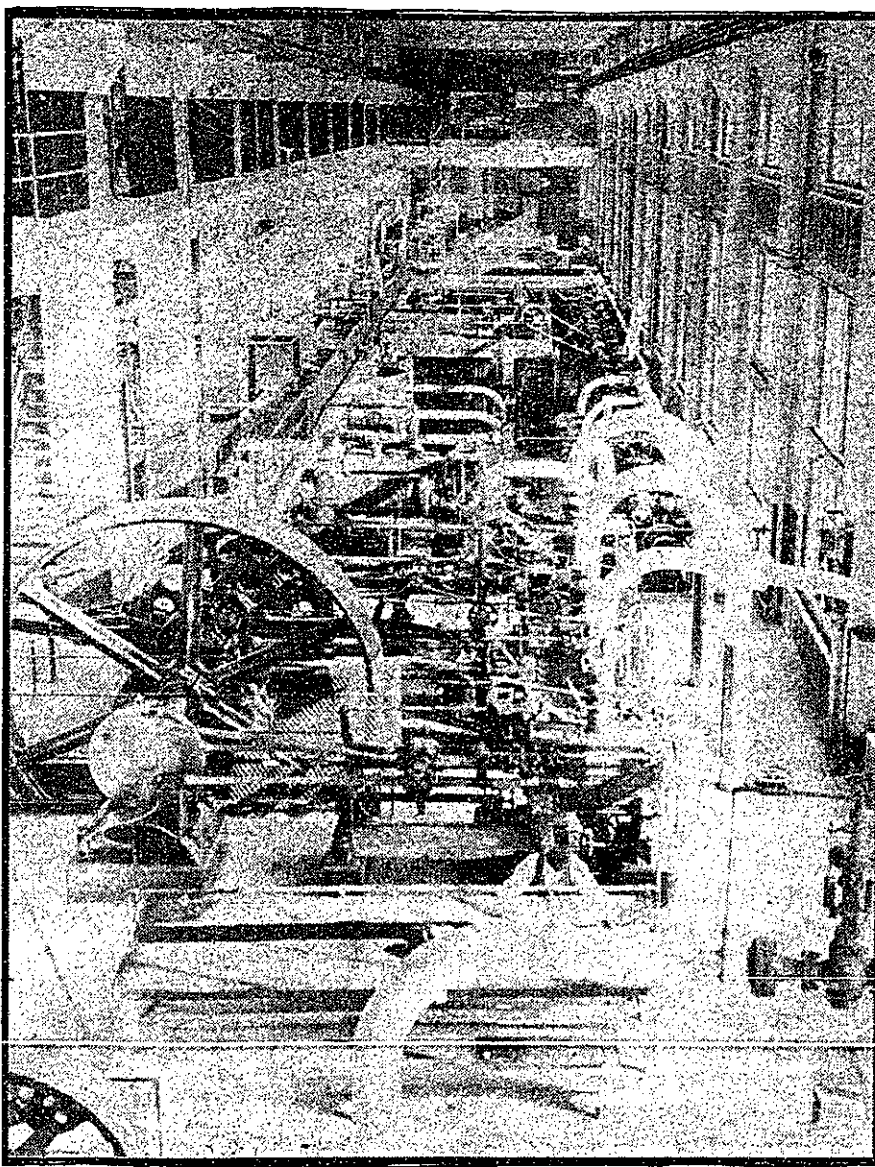
The 150's lineup finds: Beckwith at No. 1; Grant, No. 2; Jaeger, No. 3; Young, No. 4; Brauer, No. 5; Dolbrin, No. 6; Clifford, No. 7; Captain Bob Passoulis at No. 7; and Clark at Cox.

### Frosh Lineups

The frosh heavy lineup: Hagerty at No. 1; Montgomery, No. 2; Wilson, No. 3; Glacken, No. 4; Church, No. 5; Chapin, No. 7; Weir, No. 8; Draper at Stroke and Smith at Cox.

The frosh 150 lineup: Atwater at No. 1; Harvey at No. 2; McKeag at No. 3; Griffin at No. 4; Ihmels, No. 5; Guindon, No. 6; Sarano, No. 7; Morrison at stroke and Biaccardi at cox.

## View of Steam Laboratory



## Perpetual Motion Seen In Turbine

Atmospheric Heat Supplies  
Motive Power For  
Unique Model

Perpetual motion? No, but it surely seems to be close to it! And yet, there is nothing so mysterious about that miniature steam turbine running in the Steam Lab., Building 3, without any apparent source of heat.

It is all done by the heat of the atmosphere. The "boiler" is heated by the air of the Laboratory while the condenser is cooled by the evaporation of water from a wick. Thus there is created a difference in temperature, to make the steam turbine work.

### Vapor "Boiler"

Water vapor is formed in the "boiler", and passing through the glass piping, it comes to the small turbine and sets that rotating. The cooled condenser returns the water vapor to liquid water, and so keeps the vapor passing through the turbine.

This unusual power plant was loaned to the Institute for Open House by the Cochrane Steam Specialty Co.

## Dormitories Hold Dance on Friday

Murphy's Orchestra Will Play  
For Annual Spring  
Semi-Formal

The annual spring dance of the Dormitories will take place next Friday, May 10, from 9 to 2, in Walker Memorial, according to the announcement by Harold E. Prouty, '37, newly-elected chairman of the Dormitory Dance Committee.

Eddie Murphy's orchestra has been engaged to play for the event and dress will be semi-formal. This is interpreted to mean either formal or summer formal.

### Residents Assessed \$10

At the same time it was announced that dormitory men will be admitted for 50c while outsiders will have to pay a higher price. This concession is made to the dormitory men, it was said, because of the existence of a surplus in the Dorm Dance fund and in the tax fund, for which each resident has been assessed \$10.

The newly elected committee, comprising David McClellan, '37, Robert Y. Jordan, '37, and Hugh Smith, '37, has charge of the event.

## Water Wheel In Operation Shown

Demonstrates Almost Complete  
Efficiency In Energy  
Transformation

Operation of a Pelton water wheel, in a glass-walled setting, will be shown on the first floor of the Steam Laboratory today. This and other hydraulic exhibits are grouped at the south end of the room.

Almost complete efficiency is shown by this wheel, for when the stream of water coming from the nozzle strikes the buckets on the lower part of the wheel, nearly all of the energy of the water is transformed into mechanical energy.

Dropping straight downward under gravity alone, the spent water has lost all the velocity it had before striking the buckets, and all the energy stored in it has been used in rotating the wheel.

### Nozzles and Weirs

Flow of water through nozzles and weirs is taking place just alongside this wheel. Water from the nozzles streams through the air and falls in graceful curves, while the weirs measure the amount of the flowing water.

A weir is a vertical metal plate placed across the water channel, and cut so that there is a large notch in the upper surface.

## Rifle Team

(Continued from Page 6)

land Postal Intercollegiate matches; third in the Hearst Trophy Tourney; third in the Corps Area matches; fifth in the Eastern Intercollegiate Sectional Championships, and second in the New England Intercollegiate, Yale having won this honor with a margin of one point.

Next year's varsity team will be strengthened by recruits from this past year's freshman team who will have to replace such crack marksmen as Lawrence Hall, Bob Greer, and Bob Flood, Dick Rice and Louis Baldwin, who will all be lost by graduation. All five men held regular berths on the varsity team and have all seen much action in intercollegiate competition.

## Fifty Mile An Hour Air Stream to Test Miniature Autogyro

Full Size Gliders Constructed By  
Members Of A. E. S. On  
Exhibition

The huge wind tunnel in Building 33 will be put into operation today for the benefit of visitors to this year's Open House.

This tunnel, which measures five feet in diameter, and is capable of producing a wind velocity of 50 miles per hour, is used by the aeronautical engineers to test different types of plane models.

### Lift Measured

The drag and lift on the plane model is measured by an electrically operated automatic weight adjuster, the only one of its kind.

### Auto-Gyro Tested

Today, as a special feature, a model of an auto-gyro, reputed to be the safest type of airplane in use, will be tested in the wind tunnel, and its actual safety indicated. The smaller wind tunnel, in a room adjoining the larger one, will also be running, testing various models of plane sections.

In the same room as the large wind tunnel, there is a "towing tank" which is used for determining the streamlining of objects. A wing section, or any other object is dragged through a tank of water at a constant rate of flow, and the turbulent and streamline effects of the section can be observed by the action of the water.

### Aircraft Exhibited

This tank is extremely helpful in determining perfect streamline in airplanes.

On the third floor of the building various parts of aircraft are on exhibit. Glider sections, fuselage and wing sections, and propellers will be on display.

Here also, in the drawing rooms will be displayed student drawings of detailed airplane design, propeller design, engine design, and stress and strain analyses of fuselages during flight.

## Competition For Class Crews On

All Crew Men Should See Manager Hayes For Signups

Crew Manager Johnny Hayes announced last night that competition for berths on the class crews to compete in the Richards Cup Race next Friday afternoon will begin in earnest early next week. Heretofore, some of the boys have worked out at various times, but beginning Monday afternoon, all class crews will be organized for competition during the coming week. All men interested in crew, whether or not they are out for crew at the present time, should get in touch with Hayes at the boat house or at the A. A. office as soon as possible.

As in past years the winning class crew will be awarded the Richards trophy, while the individual members of the crew will be given medals.

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Cambridge, Massachusetts



## Walker

(Continued from Page 1)

tional building. All departments of Walker Dining Service will also serve continuously from 12 to 8:30.

The Tea Dance is being sponsored by the Open House committee and will feature one of the local orchestras.

### Tech Show Presented

The management of Tech Show has undertaken to put on three of the outstanding acts of Tech Show, the annual musical comedy production in which all the male and female parts are taken by students, and the score, dialogue and dance numbers are written by them.

### Activities in Basement

In the basement of Walker Memorial may be seen The Tech news office (Room 3), the Commuters' 5:15 Club Room, the Technology Christian Association, The Tech Engineering News (student engineering publication) and the bowling alleys. Representatives are on hand to explain the workings of their organizations.

In addition, the T. C. A. has members of its cabinet in the office all day to supply information regarding the Institute or any of the exhibits.

The Tech has an exhibition showing the various steps necessary to the publishing of a newspaper, from the submitting of copy by the reporters to the making-up of the paper and its final printing.

## GEORGE A. PACKARD Mining Engineer

50 Congress St. Boston, Mass.  
Mine Examinations and Advice  
as to purchase and operation of Mining  
property

The Dining Service and the lounges occupy the first floor. A sales display by the Tech Engineering News is located in the lobby. On the second floor are the Walker library and the Faculty reading room. The former contains about 5000 volumes and is maintained for the recreational reading of students, who take out about 500 books a week.

The library is well-stocked and is kept up-to-date by the purchase of about 25 books every week.

The Faculty reading room is used by the Faculty and members of the instructing staff and has many of the lighter publications and periodicals.

The gymnasium occupies most of the third floor with several other activity offices, including: Tech Show, (Room 304) annual student musical show production, Musical Clubs, (Room 302) affiliated groups of all musical organizations, Voo Doo, (Room 303), student humorous monthly publication, M. I. T. Athletic Association, (Rooms 307 and 310) and Technique (Rooms 308 and 309), annual year-book.

Practically all of these offices are open for inspection.

## Naval Museum

(Continued from Page 1)

ian ships, Dutch yachts, historical ships of all periods; portraits, etchings, charts, collections of books, and modern radio compass in full operation, are among the exhibits to be seen in the Naval Museum in Building 5.

The radio compass is an instrument capable of getting bearings or lines of position from any point on the shore to a ship. By obtaining two such lines

the ship is located at the intersection of the bearings, or lines of direction.

### Locates Ships

Ships in distress can thus be easily located by direct lines of position. This apparatus is installed on ship-board to determine the direction from which radio signals are received. The signal is tuned and adjusted to satisfactory volume. The loop antenna is rotated by means of a large wheel above the apparatus.

At some point the signal fades to a minimum at which point the angle between the line to the transmitting station and a line to the north is determined on a compass card on top of the receiver.

### 600 to 1200 Meters

Having determined this angle a line is drawn from the transmitting station (position known). This is a line of position, and if the operation is repeated, the intersection of the two lines of position determines the position. The receiver operates on a wave length of 600 to 1200 meters.

### Models of Hulls

On the walls of the museum are models of hulls of types of famous schooners, the famous Clark Collection of some twenty-five hundred lithographs, prints, and engravings of wooden ships from the earliest times to the era when steam became dominant.

The collection, brought together by Captain Arthur Clark during an active career of over sixty years of sea-faring and maritime affairs, in which he became a world-known authority, is of the greatest value not only for its historical value, but for its great usefulness in research work in naval architecture.

A collection of 37 marine pencil sketches by the late William Bradford, presented to the museum last year by Charles H. Taylor, publisher of the Boston Globe, is now on permanent exhibition there. Bradford, a native of New Bedford, began his distinguished career as marine artist by painting ships in the harbor at Lynn. He made several trips into the far north to sketch and study, and his representations of ice floes and icebergs have been exhibited both here and abroad.

A new model was added to the collection early last fall by Professor J. R. Jack. It is an Elizabethan Galley, representing one of the larger ships of the English fleet which defeated the Spanish Armada in 1588. The scale of the model is 1/4 inch to one foot. The principal data for the model was obtained from manuscripts bequeathed by Samuel Pepys to Magdalene College, Cambridge, England.

Other models, rich in color and accurate in detail, include the Santa Maria, the Constitution and the Guerriere, the Mayflower, the Monitor and the Merrimac, in addition to several unusual vessels seldom seen such as the several kinds of warships which were scrapped during the World War before they were ever put into service.

## Geology

(Continued from Page 1)

section of the earth showing a buried body of ore as such deposits are found in nature.

Traveling over this is a magnometer, the needle of which deflects as the instrument passes over the buried ore. This exhibit has been prepared under the direction of Professor Louis B. Slichter.

History for the past 10 million centuries of the ground upon which Technology is built, is illustrated by an exhibit prepared by Professor Frederick K. Morris. Specimens have been collected to demonstrate the validity of Prof. Morris' assertions.

### X-Ray Crystallography

Explorations of the inside of a crystal with X-rays and examination of rocks by polarized light, are shown in a second exhibit. Models demonstrate the structure of some of the commoner crystals and show the location of the component atoms.

X-ray photographs of crystals and rocks are on display, as well as views showing the appearance of these objects under polarized light. Professor Martin J. Buerger is in charge of the demonstration.

### Oil Well

An oil gusher in operation will be shown by Professor Walter L. Whitehead. A cross section of the ground in an oil field is shown, with the strata revealed down to the oil bearing layers. On the surface, a miniature oil well is in operation, to demonstrate the modern methods of obtaining oil from the ground.

### Ores

Ores and their occurrence are shown in an exhibit by Professor Walter H. Newhouse. Here are exhibited some of the principal ores of commercial importance, along with their naturally existing forms.

**HIGH GRADE  
TYPEWRITING**

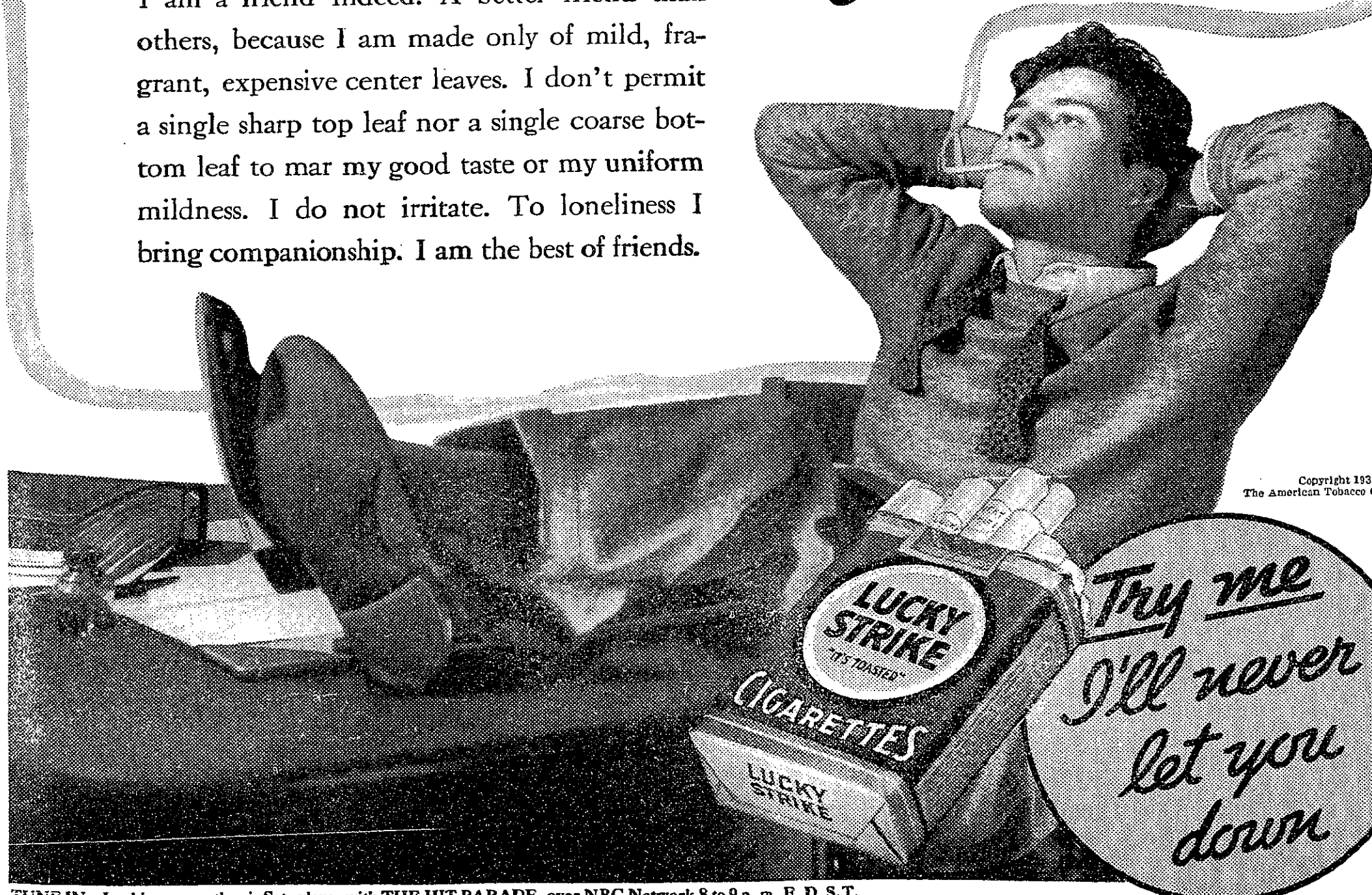
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I'm your best friend  
I am your Lucky Strike

I am a friend indeed. A better friend than others, because I am made only of mild, fragrant, expensive center leaves. I don't permit a single sharp top leaf nor a single coarse bottom leaf to mar my good taste or my uniform mildness. I do not irritate. To loneliness I bring companionship. I am the best of friends.



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TUNE IN—Luckies are on the air Saturdays, with THE HIT PARADE, over NBC Network 8 to 9 p. m. E. D. S. T.



**Electrical Engineering***(Continued from Page 1)*

Somewhat similar to this exhibit will be a representation of a whirling airplane propeller, Mickey Mouse riding a horse, vibrating springs, and the vibrating tip of a propeller as though they were stationary.

This is accomplished by flashing lights at such times that to the eye the objects appear stationary, or else moving at any desired speed.

**Sound by Light**

A modulated light beam will transmit sound to a receiving apparatus, and the sound will then be amplified. A pendulum will be set up to cut off the ray at periodic times, and this will cut off the sound.

As an adjunct to this display, moving waves of light will show the wave structure of sound.

Cosmic rays are usually thought of as vague things, but the electrical engineers will demonstrate that they are real.

By means of the Geiger counter and an amplification set-up the sound of the cosmic rays going past the receiving device will be made audible.

**High Voltage Display**

A high voltage display will be a feature of the display. At last reports it will include, among other things, a Jacob's ladder. This consists of a long spark which climbs toward the ceiling for quite a distance.

**Arcing and Sparking**

Long sparks of other sorts will also be featured. The difference between arcing and sparking, two terms which are often confused by the layman, will also be demonstrated.

As a finale to this, a disappearing sign is planned. This sign, made visible in the dark by a corona effect, is impossible to see when a light is directed against it.

**Peep Show**

The electronics laboratory in the basement of Building 10 points with pride to its "Mystery of the Electronics Lab", an elusive picture which is set up in the form of a peep show.

Their motto in this exhibit is, "The more you look the less you see."

**Beauty Parlor**

The beauty parlor is far from what one sees when one wants a permanent wave. The function of Technology's parlor is merely one of diagnosis. A mirror is provided which accentuates the need for patronizing a more orthodox establishment.

**Breath Tester**

In line with this, a breath tester has been devised which measures the freshness of breath by its cooling effect. A bell and light connection will indicate the results.

**General Story***(Continued from Page 1)*

ments and the unchanging features of nature are combined into one general impression.

Engineering and science have today joined forces with amusement and recreation to present to the world a cross section of life at Technology.

Entire arrangements have been made and are being carried out by the Combined Professional Societies. Exhibits and demonstrations are almost completely operated by undergraduates.

**Technique Rush***(Continued from Page 1)*

smeared over the top and sides of the shack in order to prevent the students from obtaining the paddles too easily.

The shack is a wooden, circular structure about ten feet high with a rounded top, constructed in such a way as to make it practically impossible for one man to reach the slit in the top of the roof without climbing over the other competitors.

When there are many competitors the Rush becomes an exciting affair in which to participate and a humorous one to watch.

**Clothing Disappears**

Ambitious scramblers often have been divested of their entire clothing in the struggle, and no one who ac-

tively participates will return from the field without being somewhat the worse for wear.

**Parade First**

Before the Rush begins the oil and grease are ceremoniously poured over the shanty. This procedure is followed by an unusual parade led by two Scotch bag-pipers wearing their native clothing and actually playing the pipes. They will be followed by the Technique Staff nattily attired in white flannels.

**Five Dollar Prize**

The first paddle to be given out, for which the prize of five dollars is offered, will not be issued from the slit in the top of the shack as will the other paddles, but will appear in a mysterious manner.

A gun shot, or some other signal will be given, which will inform the contestants that the first paddle is available.

Last year one of the chorus girls from the Tech Show appeared on the scene and suddenly raised her skirt, revealing the paddle neatly tied to one of her thighs.

The added prizes should encourage a large number of men to participate this year. The student obtaining the first paddle, as well as receiving the first prize of five dollars will obtain his free copy of the year book.

**Chem. Lectures***(Continued from Page 1)*

At each presentation, the same subjects will be covered, so that a larger group of visitors can be accommodated. The lecturers have been chosen from the freshman chemistry sections.

**Speakers**

Speakers with their topics are as follows: Jay P. AuWerter, '38, "Carbon dioxide"; Frank W. Brown, '38, "Combustion Phenomena"; Albert M. Clogston, '38, "The Chemical Clock"; Frederick J. Kolb, '38, "Fixation of Nitrogen"; Vernon G. Lippitt, '38, "Cold Light"; Dale F. Morgan, '38, "Chemical Energy"; John R. Robbins, '38, "Thermite."

**Mining and Metallurgy***(Continued from Page 1)*

side. The crushed ore is then led over mercury with which the gold amalgamates. The amalgam is removed and the gold extracted.

The ore which will be used in the demonstration, however, will not be actual gold ore but pyrites which closely resemble it.

Ceramics will also be a part of the Mining exhibit today. The main feature will consist of an exhibit of pottery making with the use of the wheel.

A brick machine which molds and presses clay bricks will be exhibited in 4-033 together with a kiln furnace and various ceramic pieces such as statuary and pottery.

**C. E. Department***(Continued from Page 1)*

Civil Engineering Department.

In the same room will be concentrated the other exhibits of the department, with the exception of the River Hydraulics Laboratories in Buildings 20 and 21.

The model of the power development is a large scale working model occupying 100 square feet. It shows in miniature the hydroelectric development on the Connecticut River in Vermont.

In Building 20, at the rear of the Institute, the Civil Engineering Department shows the progress of the work on a model of the Cape Cod Canal made by Professor Kenneth C. Reynolds of the River Hydraulics Laboratory for the United States Engineers. This model is being constructed to study the effects of widening and deepening on the flow of the tides in the canal.

The river hydraulics laboratory has previously made model studies not only on the Cape Cod Canal but on other projects such as the Connecticut River.

In Building 21, the river hydraulics laboratory has a display of all apparatus in operation including a special West Point thesis by four army men on seepage through an earth dam.

**Boondoggling***(Continued from Page 1)*

of '38 will display exhibits which they designed and built without the guidance of instructors.

**Tiny Airplanes Shown**

The demonstration represents practically every field of study, including several aviation exhibits. Haskell Gordon will show visitors what are said to be the world's smallest airplane models. These reproductions are so tiny that they must be viewed through a microscope. In addition, there will be numerous other plane models and one reproduction of a complete flying field.

Francis W. Haggerty, who is student chairman in charge of the freshman exhibit, will show a marine display featuring the subject of whaling. Completing the marine exhibit, Howard Lawrence of Upper Montclair, N. J., will show a sextant and compass, as well as other nautical devices.

Among the radio exhibits will be one by Fred Lamb. Lamb, who spends his summers as a radio operator in the Naval Reserve Corps, will show a complete transmitter.

Photography will also occupy an important position. Several students will show photographic processes, while others will display some of their outstanding pictures. Among this class of exhibitors will be photographers from Technology's undergraduate publications.

Not all of the exhibits will be strictly scientific, for some of the students have used classical sources. Accordingly, the Open House guest will see a complete Elizabethan theatre model. Alwyn Marston will show a model stagecoach which he designed and constructed.

Several collections will round out the freshman display. Among these are an excellent group of butterflies, to be shown by Abner Towers. Another interesting collection includes several varieties of bacteria, which will be shown by means of shadow projection.

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